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MUNICIPAL JOURNAL AND ENGINEER

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SEPTEMBER 25, 1907.

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Trees on Business Streets

To many, even of those strongly advocating parks and shade trees, it is becoming apparent that their maintenance in business streets is generally impracticable. In its native state the tree is fertilized by the falling leaves and dying undergrowth, and in parks some method of fertilizing is generally necessary. It is, therefore, difficult to understand how a tree could be made to thrive where the entire surface over the area which its roots could possibly reach is hermetically sealed with street and sidewalk paving. In a business street of ordinary width the entire sidewalk space is so necessary for constant daily use that it would seem to be impossible to cultivate strips of grass inside the curb, and even bare earth left in this location would probably be so compacted by the feet of

passersby as to afford little ventilation to the ground and to be almost as impervious to water as a pavement. But trees should not be omitted from any greater territory than commerce has already claimed as her own. As has been demonstrated time and time again, trees are a valuable asset to the city and should no more be ruthlessly destroyed than a fountain, a statue or other ornamental feature of the highway.

Misleading Financial Statements

ON a following page is given an article descriptive of a combined water and lighting plant owned and operated by a city of 6,000 population. In the financial statement it is credited, as it should be, with a conservative amount of hydrant rental and payment for lamps used in street lighting, as well as those in the City Hall. In the operating expenses are included insurance, but nothing for taxes or depreciation (as the writer of the article states), and interest is added on only the \$10,000 additional paid for the lighting plant, as we understand it. Thus calculated, a surplus on the combined plant of \$4,084.51 is left to cover the items above mentioned, \$3,042.10 of this being for the lighting plant alone. As these figures appear to be quite complete, and not complicated by indefinite relations with other departments, this seems a good opportunity to illustrate the incompleteness of and misleading deductions from the financial statements of many plants. For purposes of illustration, let us assume that of the total cost \$75,000 covers the water works plant and \$40,000 the electric lighting plant. The bonds sold bear 4 1-2 per cent. interest, and in calculating the profitability of this municipal enterprise interest should be figured on the total cost. No depreciation was allowed for, and a fair rate for this would probably be 2 per cent. on the cost of the water works plant and 7 per cent. on that of the lighting plant. The sinking fund for redeeming the bonds should be approximately \$2,000 a year for the water plant and \$1,100 for the lighting plant. Combining these figures we find for the water plant a total of \$3,375 + \$1,500 + \$2,000, or \$6,875. The operating expenses of this plant were given as \$4,792, making a total (exclusive of taxes) of \$11,668. As the income was \$5,375 there appears to be a net loss for the water works plant of \$6,293 plus lost taxes. The operating expenses of the lighting plant are given as \$1,875; the interest would be \$1,800, depreciation \$2,800, and sinking fund \$1,100, giving a total of \$7,575. As the total income was given as \$5,377, there is an apparent net loss of \$2,198 plus lost taxes. The total loss is, therefore, something over \$8,500 a year on the combined plant. It is considered by some, especially conservative English authorities, that both depreciation and sinking fund should not be charged against a municipal plant, since this places the entire cost of the plant upon the present generation, leaving for the future merely its upkeep; and there is certainly some reason in this contention. But if we admit this, and make no provision for a sinking fund with the understanding that the next generation will retire the bonds, as well as make extensions, by the issue of new ones, upon which, in turn, they will pay

interest, we still have a loss of \$5,400. This is called a loss, but it may, of course, be considered as the price which the citizens are willing to pay for increased efficiency or more direct control of their water supply and public lighting. Moreover, this was the first year of operation of the plant, and few plants can show a profit during the first one or two years of operation, and it does not by any means follow that this plant may not be actually remunerative in a few years.

It is not intended to criticise the city either for the adoption of municipal ownership or for any details of its operation; but solely to call attention to the erroneous impression which is frequently given out by a plant that it is actually a money-making institution for the city, when a strict analysis would show it not to be so.

MUNICIPAL WATER AND LIGHT PLANT

Accounts for Water and Lighting Kept Separate—Lower Furnished by Oil Engines—Nothing Allowed for Sinking Fund

CHEAP electric lighting is furnished for the city streets of Menasha, Wis. (6,000 population), by the new Municipal Water and Light Plant, established somewhat over a year ago. The report for the first twelve months shows the total cost of operation, including interest and insurance, to be \$6,667.49, while the receipts amount to \$10,752, leaving a surplus of \$4,084.51 the first year for profit and depreciation. Separate water and lighting accounts make it possible to determine which is the more profitable end of the undertaking, the electric plant being mainly responsible for the surplus, according to the report of S. S. Little, who furnishes the facts and figures below. What makes the plant doubly interesting is that fuel oil is used instead of coal, and has proved to be markedly cheaper. No boilers are necessary; the oil is pumped from the car a short distance to the station tanks, and sprayed into the engine cylinders under an air pressure of 60 atmospheres—900 pounds.

The city began supplying water from its municipal pumping station in November, 1905, at an initial cost of \$105,000—\$75,000 of 4½ per cent. bonds being issued, and the rest paid in cash from city funds on hand. In February, 1906, the electric equipment was added, at a supplementary cost of \$10,000 for dynamo, poles, wire, lamps, etc., so that the total investment amounts to \$115,000. Two Diesel engines, 75 b.h.p. each, run two 1,250,000-gallon Gould pumps. The second engine drives a 50-kw. a. c. generator, and is used almost exclusively for lighting purposes; although, connected also to the second pump, direct, it acts as a reserve pumping engine in case of fire. The first engine keeps the standpipe filled, running on an average about three hours a day. The standpipe, 135 feet high and of 86,000 gallons capacity, exerts when full a pressure of 64 pounds on the city mains; in an emergency the standpipe may be shut off from the mains, and the engines supply to the hydrants directly a pressure of 150 pounds.

There are 11 miles of mains—4 miles of 6-inch pipe, 1 mile of 8-inch pipe, 3 miles of 10-inch, 1½ miles of 12-inch, 1,464 feet of 16-inch, 1,356 feet of 20-inch pipe—which supply 87 hydrants and 225 individual consumers. All services are metered, Keystone meters being used, made by the Pittsburg Meter Company. During July, 1907, 4,000,000 gallons of water were pumped. The water is taken from the Menasha branch of the Fox River, upon the bank of which the plant is situated. The water is not filtered, being clear and free from vegetable growths. Many of the large paper mills and other manufacturing concerns are located on the river, and from this general source pump all the water needed for their own use, which reduces the amount which might be sold by the city, and is therefore unfavorable to its financial success.

Meters are placed in the city hall, school buildings, etc., and the water paid for as in the case of a private consumer. Means are thus furnished for determining accurately the financial results of the water works management by including in the accounting the large pumping furnished to city and schools, so often unnoticed and uncounted, and is only a little less valuable than the separation of water works from lighting account.

The schedule of rates is: 15 cents per 1,000 gallons for any amount per day between one gallon and one thousand gallons; 10 cents for 1,000-3,000 gallons a day; 8 cents for 3,000-6,000 gallons, and 6 cents for any amount between 6,000 and 12,000 gallons per day. A minimum charge of \$5 per year, however, is collected of all users of water, payable semi-annually.

There is no water collector, the unique method employed being the following notice, which is left each half year at the house when the meter is read:

NOTICE TO WATER USERS

No bill for water used will be either mailed or delivered to you; it will be necessary for you to call at the City Treasurer's office some time between the 1st and 10th of May, pay the tax and get a receipt.

During the time for collecting water tax the Treasurer's Office will be open evenings for the accommodation of users.

On May 11 the water will be turned off from any service where the tax is not paid, and an extra charge of \$1.00 made for turning the water on.

The city officers have strict orders to refuse any request for extensions or modifications of these rules.

CITY OF MENASHA, WATER AND LIGHT COMMITTEE.

This method is reported as entirely satisfactory, only occasionally a service having to be turned off for a day. Strict enforcement at first has prevented violations later.

PROFIT ON COMBINED PLANT

The receipts of the whole plant (water and lighting together) for the first year is as follows:

87 hydrants at \$50.	\$4,175.00
Water rents (Feb. 1, '06, to Feb. 1, '07, estimated*)	1,200.00
77 arc lamps at \$65.	5,005.00
From incandescent lighting (city hall, power house and one store)	372.00
Total receipts	\$10,752.00
Operating expenses	6,667.49
Surplus (for profit and depreciation)	\$4,084.51

*Note.—This estimated amount was exceeded, the actual receipts being over \$1,400.

LIGHTING ACCOUNT

Lighting is furnished all night and every night; there is no moonlight schedule; 77 arcs are in service for about eight hours in summer to thirteen hours in winter. The separate lighting account is as follows, for the same period:

EXPENSES	
Supplies (carbon, globes, etc.)	\$209.01
Lubricating oil (three-sixths charged to lighting)	94.45
Fuel oil (five-sixths charged to lighting)	755.25
Salaries of two engineers (one-half charged to lighting)	690.00
Lineman (lamp trimming, etc.)	50.75
Coal (for warming power house) (one-half charged to lighting)	47.44
Insurance (one-half being charged to lighting)	22.50
Repairs	5.50
Total operating expenses (includes insurance)	\$1,874.90
Interest (on \$10,000)	460.00
Operating expenses, insurance and interest	\$2,334.90

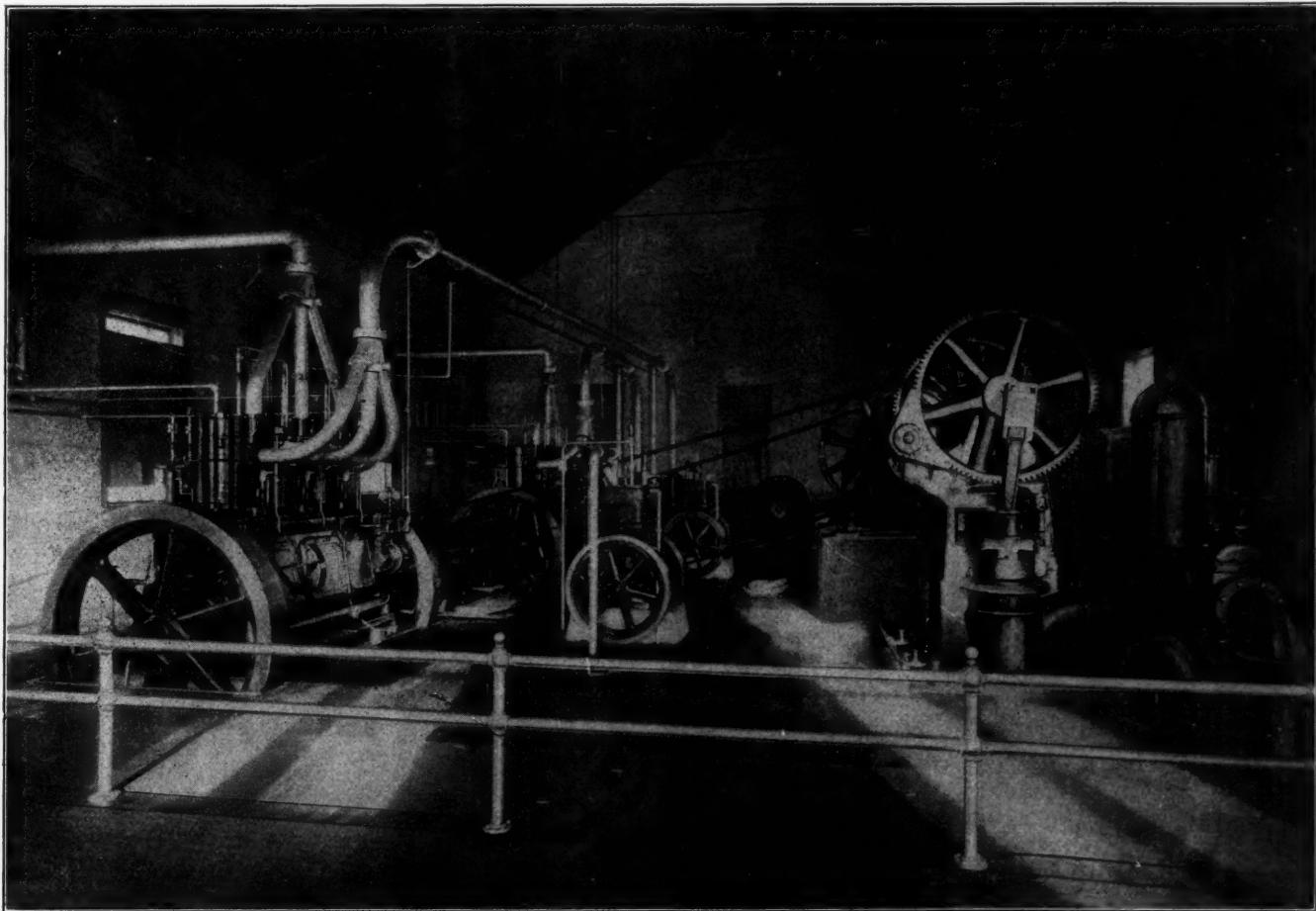
RECEIPTS.	
77 lights at \$65.	\$5,005.00
City hall, power house, etc. (incandescents)	372.00
Total receipts	\$5,377.00
Operating expenses	2,334.90
Surplus (depreciation and profit)	\$3,042.10

No allowance is made for lost taxes, that is, the amount which the city would have received from taxes on the plant if it were the property of a private company; and depreciation is allowed for only as included in the lump surplus of \$3,042.10. The General Fund of the city is charged \$65 per arc, the price for which the

private company now furnishing commercial lighting, and formerly supplying street arcs, agreed to contract for. The money is paid into the Water and Light Fund; the actual cost, exclusive of allowance for depreciation and lost taxes, but including interest and insurance, is, according to the City Clerk's report, \$25.49 per arc per year. The cost of the fuel oil which runs the Diesel engines is small. It takes 5 gallons per hour to run 80 arcs, and the cost per gallon varies from 3 38-100 cents to 3 75-100 cents, the latest quotation being 3 55-100 cents per gallon, delivered. To pump the oil from car to receiving tank costs about 60 cents (time of pumper) two or three times a year.

Two engineers care for the plant—more exactly, an engineer and an assistant—one at \$75 a month, one at \$50. An electrician, employed as needed, acts as lineman. The City Clerk acts as purchasing agent, and receives for his services as Clerk of the Water and Light Fund the sum of \$100 a year. The general control of the plant is in the hands of a Water and Light Committee of the City Council, consisting of the Mayor and four Aldermen, whom he appoints, one from each ward.

No sinking fund is provided for. The bonds mature, beginning in 1914, at the rate of \$4,000 a year. As the city is at present paying about \$4,500 a year on school and bridge bonds, it is not anticipated that there will be any difficulty in paying off the amount specified after 1914, when the last of the other bonded debt will be extinguished.



MENASHA WATER AND LIGHTING PLANT. OIL ENGINES, PUMPS AND GENERATOR

The real cost of each 2,000 c.p. arc is figured at \$25.49 by subtracting from \$2,334.90 (the total operating expenses of the electric plant), the \$372 paid by the city for incandescents, and dividing the remaining \$1,962.90 by 77, the number of arcs at present in use; but this is too low. A glance at the table of expenses shows that the amount of interest charged against the electric plant, \$460, is only the interest on \$10,000, the additional investment expended for the lighting equipment. Interest on part of the original cost of the building, which houses both pumps and dynamo, should certainly be figured in on the lighting account, instead of throwing the entire burden upon the water works. Still, so burdened, the water costs $\frac{1}{4}$ of a cent per thousand gallons pumped, figuring fuel oil at 4 cents a gallon, and the plant seems to offer a very successful example of a combined municipal water and light station. There is a strong sentiment in favor of adding another oil engine and dynamo, to furnish incandescent lighting to stores and houses, and this will probably be done in the near future.

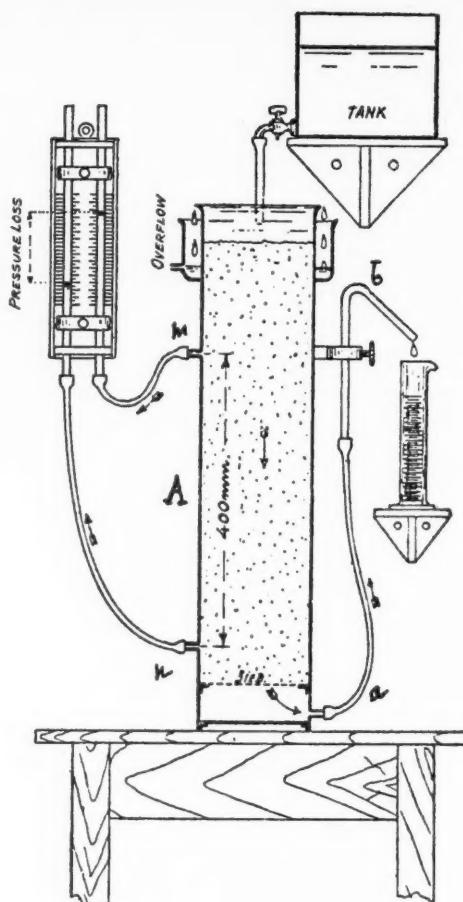
VELOCITY OF FLOW IN SANDS

MR. G. THEIM has made experiments on the flow of water through sands and gravels which are of especial value and interest in connection with sand filters. We are indebted for his description to the *Journal für Gasbedeutung*.

The author, after having alluded to the formula of Darcy-Duperit, which is based on the comparative relation between the velocity of circulation of water through a porous medium, and the loss of pressure or head which produces the circulation, remarks that this comparative relation is not entirely exact. It is sufficiently approximate only for small losses of pressure, but for heavy pressures gives too great a velocity. In order to make use of this formula, it is necessary to determine its coefficient by experiment, whether by using such sand as is ordinarily put into a filter or by selecting samples of natural soil, if it be the question of a subterranean stratum. The theoretical studies which have been made upon this subject have taken as a starting point the geometrical arrangement of equal spheres; but in practice, grains of sand or of gravel are far from being spherical. It must be supposed that the permeability will depend greatly on the position of the grains in the experimental layers or strata. The author has undertaken to inquire into the influence that the manner of arranging the sand might exert on the quantity of water delivered in a given unit of time. For this purpose he has had made the apparatus here illustrated.

A cylinder *A*, furnished at its lower part with a sieve, is filled with the sand to be experimented upon. The water, kept level with the upper part, flows, after filtration, through a tube *a b*, the height of which can be changed so as to give different pressures. The loss of pressure is recorded on two pressure gauge tubes, originating at two orifices in the side of the cylinder at a fixed distance apart of 400 mm. (15 3-4 inches).

This apparatus makes it possible to determine the coefficient *E*, of permeability when the loss of pressure *i*, the



section of the cylinder *S*, and the quantity of water delivered in a given unit of time *T* are known, by means of the Darcy-Duperit formula put in the form $T = E S i$. In order to overcome the effect of the smooth sides, the interior of the cylinder was treated with boiling linseed oil, covered before it had hardened, with a layer of fine gravel.

Four sorts of material were employed for these experiments, fine sand, medium sand, coarse sand and fine gravel, and for each sort the mode of arrangement was varied in the following manner. For one series, the sand, previously dried, was put in dry and stamped down in such a way as to give the irregular arrangement shown in Fig. 1. For the two others the distribution of material was made by means of a flow of water so contrived as to arrange the layers either parallel to the longer axis of the cylinder (as in Fig. 2) or perpendicular thereto, as shown in Fig. 3.

The kinds of sand used show the following characteristics:

Sample	Actual Size	Coefficient of Uniformity
1 Fine sand.....	0.086 mm.	3.2
2 Medium sand.....	0.250 "	1.5
3 Coarse sand.....	0.290 "	2.1
4 Fine gravel.....	0.620 "	3.5



Fig. 1



Fig. 2

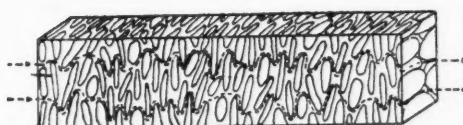


Fig. 3

The temperature in these experiments varied between 15° and 17° C. The results are summed up in the following table:

Distribution by Water in Layers Perpendicular to the Current		Arrangement in Dry Form		Distribution by Water in Layers Parallel to the Current	
I	E	I	E	I	E
FIRST—FINE SAND					
		0.0675	0.0000202	0.0550	0.0000218
		0.1263	0.0000207	0.1062	0.0000222
		0.1788	0.0000210	0.1526	0.0000222
		0.2451	0.0000212	0.2088	0.0000212
		0.3014	0.0000215	.....	.....
		0.3500	0.0000215	.....	.....
Average.			0.0000210		0.0000220
Ratio.			I		1.04
SECOND—MEDIUM SAND					
0.0350	0.000102	0.0288	0.000205	0.0550	0.000315
0.0800	0.000097	0.0688	0.000209	0.1062	0.000317
0.1075	0.000088	0.1012	0.000209	0.1526	0.000315
		0.1500	0.000209	.....	.....
		0.1987	0.000210	.....	.....
		0.2476	0.000209	.....	.....
		0.3027	0.000208	.....	.....
		0.3590	0.000207	.....	.....
Average..	0.000096	.....	0.000208	.....	0.000316
Ratio...	0.46	.....	I	.....	1.52
THIRD—COARSE SAND					
		0.0625	0.000323	0.0550	0.000475
		0.1100	0.000323	0.0800	0.000476
		0.1518	0.000323	0.1062	0.000476
		0.2163	0.000322	0.1300	0.000480
				0.1525	0.000474
Average..			0.000323	.....	0.000476
Ratio...			I	.....	1.48
FOURTH—SMALL GRAVEL					
		0.0438	0.000448	0.0550	0.00165
		0.0738	0.000445	0.0800	0.00165
		0.1012	0.000445	0.1062	0.00162
		0.1255	0.000445	0.1550	0.00164
		0.1525	0.000447	.....	.....
Average..			0.000446	.....	0.00164
Ratio...			I	.....	3.68

This table shows that the Darcy-Duperit formula is sufficiently exact within the limits of the experiments, but that the manner of arranging the material has considerable influence. Distributing it in layers parallel to the direction of the flow of the water gives the highest results, as might easily be supposed; yet in this mode of

arrangement the volume of the pores is smaller than in the irregular distribution.

A calculation of the areas of the empty spaces gives the following results:

Sample Area of Empty Space	1	2	3	4
Irregular dry packing.....	31.5%	29.8%	29%	18.8%
Distribution by water.....	25%	27%	26%	18.3%

A diminution of the volume of the pores does not, therefore, conduce to a lessening of the permeability, as theoretical calculations show it should do.

The author has also profited by the opportunity afforded by his experiments for testing the well-known formulas of Hazen

$$E = 0.01157 d_w^2 (0.7 + 0.03t)$$

and that of Schlichter

$$E = 0.07146 d_w^2 (0.7 + 0.03t)$$

K

d_w is the actual size in millimeters, t the temperature in degrees by centigrade and K a coefficient depending on the volume, or area of empty space of the pores, or interstices.

The application of these formulas produces the following values for E :

Samples	Hazen Formula	Schlichter Formula
One.....	0.000101	0.000014
Two.....	0.000853	0.000098
Three.....	0.001150	0.000120
Four.....	0.005200	0.000120

These results can be compared with the averages given by the experiments as summed up below:

Samples	Packed by Water in Layers Perpendicular to the Current	Packed Dry	Packed by Water in Layers Parallel to Current
One.....	.....	0.000021	0.000022
Two.....	0.000096	0.000208	0.000316
Three.....	.....	0.000323	0.000476
Four.....	.....	0.000446	0.001640

The Hazen formula gives results that are too large, and that of Schlichter results in general too small. It will be seen from this study that it is very difficult to find a formula to express a phenomenon so complex as filtration, especially a natural process of filtration in a soil, the composition of which is necessarily variable.

Direct observation on the spot will give the best results on the production of subterranean strata. By digging wells and maintaining a regular rate of pumping while observing the changes of level about the well, would make it possible to determine the coefficient of permeability.

Notes Concerning Shade Trees

THE Board of Public Works of Lynn, Mass., in its Annual Report for last year, makes two recommendations which seem to us worthy of consideration by other cities. With reference to shade trees on business streets, the Board says:

"As a public way merges from a residential street to a business thoroughfare, becoming congested with heavy

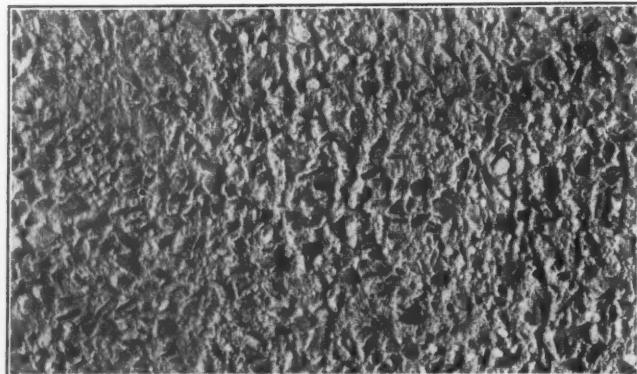
traffic requiring impervious roadway and sidewalk pavement which stifles trees, it appears wiser to abandon sentiment and immediately accept the inevitable by sacrificing them instead of procrastinating and in a very short time breaking up the pavements in displacing them after they have been killed."

We have been impressed recently with the serious mutilation of trees and injury to macadam paving caused by moving large buildings through streets, to say nothing of the obstruction to traffic which often continues for days, and we believe any city is justified in preventing such infringement of public rights. In Lynn "the experience of the Board during six years has forced it to the general policy of denying the use of public ways for this purpose [moving buildings through streets] except in face of most cogent reasons based upon extraordinary conditions. Small and light structures which can be loaded on trucks and transported without injury to trees or wires and discommuting the public are not necessarily barred from passage through the streets."

Finishing Concrete Surfaces

A VERY large number of bridge abutments, retaining walls and other pieces of masonry presenting large, continuous surfaces are now being constructed in cities throughout the country of concrete, and with excellent satisfaction. In most cases they are given a smooth finish, which offers the objections of being glaring in a bright light, of showing the finest of hair cracks, that any irregularity in mixing shows in the color, and that any patching is apt to result in scaling off of the surface. A more pleasing appearance has been obtained by the Philadelphia Department of Public Works in its concrete structures by the construction of what it calls granolithic surfaces. In this the removal of the mortar leaves the surface color that of the stones used; it is not so liable to streak, and cannot be scribbled on or covered with posters. The illustration is photographed from such a surface, being about one-fifth actual size. The use of a stiff scrubbing brush or wire brush in connection with the washing will expedite the work. The specifications of the Philadelphia Department of Public Works for granolithic surfaces are as follows:

Granolithic surfacing, when required, shall be composed of 1 part cement, 2 parts coarse sand or gravel and 2 parts granolithic grit, made into a stiff mortar. Granolithic grit shall be granite or trap-rock crushed to pass a $\frac{1}{4}$ -inch sieve and screened of dust.



"GRANOLITHIC SURFACE" OF CONCRETE. ONE-FIFTH ACTUAL SIZE

For vertical surfaces, the mixture shall be deposited against the face forms to a least thickness of one inch, by skilled workmen, as the placing of the concrete proceeds, and thus form a part of the body of the work. Care must be taken to prevent the occurrence of air spaces or voids in the surface. The face forms shall be removed as soon as the concrete has sufficiently hardened, and any voids that may appear shall be filled with the mixture. The surface shall then be immediately washed with water until the grit is exposed and rinsed clean, and protected from the sun and kept moist for three days. For bridge seat courses and other horizontal surfaces, the granolithic mixture shall be deposited on the concrete to a least thickness of $1\frac{1}{2}$ inches immediately after the concrete has been tamped and before it has set, and shall be troweled to an even surface, and, after it has set sufficiently hard, shall be washed until the grit is exposed.

Road Tarring Contest

As stated in the MUNICIPAL JOURNAL at the time, a contest was held a few months ago in connection with which prizes were offered for the best tar-spraying machine and the best preparation of tar to be used for dust prevention. The Committee of Judges have awarded the first prize of 100 guineas (\$500) and the Roads Improvement Association's gold medal for tar-spraying machines, to the Aitken's Pneumatic Tar Sprayer. The second prize of 50 guineas and a silver medal were awarded to the "Tarspra" machine. For preparations of tar, the first prize of 100 guineas and a gold medal were awarded to "Clare's Patent Tar Compo."

The Aitken Sprayer is described by the inventor as "a pneumatic spraying apparatus which can discharge distilled tar in a hot or cold state, or other viscous liquid in a highly diffused state, and at considerable pressure in the surface of macadamized roads." The "Tarspra" machine is a steam motor roller, carrying a tank, in which the tar can be heated to any desired temperature and distributed through atomizing nozzles at 250 pounds pressure.

STREET CLEANING METHODS AND COSTS

THE Citizens' Committee on Street Conditions of the City of Boston, Mass., arranged some time ago with Mr. Richard T. Fox, of the Chicago, Ill., Street Cleaning Department, to visit their city and make a report upon the Street Cleaning, Sprinkling and Sanitary Departments. This report has recently been published and apparently shows that the efficiency of these departments in Boston is not all that it should be; the chief criticism being that, through lack of proper management and supervision, the various employees are not furnishing a full day's labor for a daily pay which is certainly generous enough to secure it, common laborers being paid \$2.25 a day. While the criticisms are of special interest to the citizens of Boston, there are several statements made by Mr. Fox which are of more general interest. One of these is that machine sweeping is inferior to hand sweeping, special reference being had to stone block pavements. "As a machine operates lengthwise with the street and against the furrows in the pavement, it tends to drive the dirt into the crevices and to smooth it flush with the street surfaces rather than to brush it off."

In connection with removing the dirt from the streets, it was found that each cart was provided with both driver

and helper, and that while a cart is on a trip to the dump and back, the helper waits in the street, this causing a loss of about one-half his time. It was observed that the carts are filled but little more quickly than if only one man was assigned to each cart. "It may be noted that in no other large cities does this practice obtain of assigning two men to one cart. In New York, where hundreds of carts of similar capacity to the Boston vehicles are used, there is but one man to a cart. Chicago, too, uses carts of the same capacity and only one man is assigned to each. Each of Chicago's one-man carts makes four trips daily over the same length of haul as prevails in Boston, one-half of a mile. Boston two-man carts make only four trips daily apiece, the Boston department thus using twice as much labor as Chicago for the same results." In the sanitary department also two men are assigned to one cart with a similar resultant loss of labor. The carts used for paper collection have very high sides and three men are assigned to them, although one could empty the same barrels into carts with lower sides. Mr. Fox found a great deal of idleness among the push cart men, amounting to fully one-quarter of the time, and noticed that when not actually idling they were very lax in collecting dirt.

Some figures are given by him concerning stable expenses. S. S. Pierce & Company pay \$27.67 per horse per month for shoeing, veterinary services and boarding in a public stable; and \$19.00 per month is a fair average yearly price per horse maintained at private expense. \$2.78 per month for shoeing he considers a reasonable price. S. S. Pierce & Company pay a little less than \$2 a year for veterinary services and medicine; the Knickerbocker Ice Company of Chicago, \$5.00 per year per horse. The Boston Fire Department pays \$12.00 and the Street Cleaning Department \$17.97 for these services.

With reference to the city employees, Mr. Fox makes several recommendations and general remarks. The Boston Civil Service Commission arranged the names on the

eligible list in the order of the number of persons dependent upon the applicant, which is possibly a reason why so many old men are found employed by the department. "It is unfair, perhaps, to the man who has grown old in the city service to discharge him when he is no longer able to make a living elsewhere, yet it is also unfair to the public to employ a man who is unable to do an average day's work. His employment tends to undermine discipline and otherwise to demoralize the working force. The progress, for instance, of sweepers working in a gang is dependent upon the industry of the slowest man in it, and if this man is crippled or infirm the entire gang might as well be in the same condition, so far as the amount of work accomplished is concerned. If each man in the above case were allotted a separate area of streets to clean, dissatisfaction would arise because of the necessary unequal division of work between the fit and the unfit. Except for certain positions, of which there are but few, there are no places that the old men can fill and do justice to the public." If old men must be provided for, he considers the pension system as much the cheaper on the long run.

Although Boston is one of the few cities which publishes monthly statistics concerning various municipal departments, these records he considers unsatisfactory and incomplete. "One is unable to get an exact idea of how the work is conducted, how many men are employed, the cost of the removal of dirt, the number of horses and other equipment owned, etc., without much explanation." "A business conducted as is the average city department would be bankrupt very shortly. An exact division of the work placing responsibility and a system of records calling for detailed reports on different areas swept, the cost for labor, teams, etc., the amount of dirt removed, and all the other statistics necessary for a thorough examination of the business of the departments, would be a check on the work and would go a very long way towards preventing padded pay rolls."



HEAVY-TRAFFIC STREET SWEPT BY HAND ONLY. NOTE ABSENCE OF DIRT BETWEEN STONES



HEAVY-TRAFFIC STREET SWEPT BY MACHINE AT NIGHT AND PATROLLED THROUGH THE DAY

NEWS OF THE MUNICIPALITIES

Divers Subjects of General Interest and Their Treatment by City Councils and Officials—Streets, Water Works, Lighting and Sanitary Matters—Police and Fire Items—Government and Finance

Roads and Pavements

LOS ANGELES, CAL.—For nearly a year the City Engineer has been subjecting samples of asphalt and asphalt paving mixtures to chemical inspection, and as a result of his belief that changes already made in the quality of asphalt used by reason of such testing will save the city thousands of dollars in asphalt repairs in years to come, the Board of Public Works has requested the City Council to create a position of Asphalt Tester, at a salary of \$4.50 per day, this position to be in addition to other positions now existing in the Department of the City Engineer.

MERCHANTVILLE, N. J.—The contracting firm of the Stevens-Hewitt Company recently abandoned its contract to build the sewer system in Merchantville, alleging that breach of contract by reason of inability to secure remuneration from Council for extra work not contemplated, and lack of right-of-way to the proposed disposal plant, and the ground on which to build it, had interfered with the work. The borough authorities denied the charges and Council authorized the Mayor to keep the contractors' force at work to finish the sewer and charge the cost against any moneys due or to be due the contractors, and if the cost exceeds the balance unpaid, the bondsmen will be called upon to make up the amount. The sum of \$5,000 will be drawn each month for pay rolls and the Borough Treasurer will be paymaster.

PHILADELPHIA, PA.—Chief Benson, of the Highway Bureau, finds that, because so little money has been spent in repair work the past year, streets in some sections are a menace to pedestrians as well as teams, and that it will require over \$100,000 to make the necessary improvements. The loan money has already been appropriated, in which \$1,000,000 was set aside for paving, but the repair item was apparently overlooked. Although the officials of the Bureau do not expect to secure enough money to make all the improvements needed this year, they will make an effort to convince Councils of the urgent necessity for more money for repairing the sections most complained of.

Sewerage and Sanitation

BRIDGEPORT, CONN.—The Board of Health has rescinded its order forbidding the further operation of the plant of the Bridgeport By-Products Company, as President J. B. Livingstone of the company notified President Rogers of the Health Board that repairs on his plant had been completed and that it was in a position to proceed with the reduction of garbage. The sewer leading from the plant has been extended so that it empties under two feet of water at low tide. Before such extension it is alleged to have been only partly covered by water at low tide.

COMMERCE, GA.—Mayor C. J. Hood recently invited City Engineer J. W. Barnett, of Athens, to visit Commerce to devise some plan whereby the contents of the proposed sewerage system of the town can be disposed of instead of being discharged into the Oconee river, objection to which has been made because that stream is used to furnish drinking water to the people of Athens.

NEWARK, N. J.—The Board of Trade is making a renewed effort to hasten measures for the remedy of what

it calls "intolerable river conditions" of the Passaic. At a recent meeting of the Board, the Passaic Valley District Sewerage and Drainage Commission was criticised because of its inactivity, as it is asserted that the state of the river is so wretchedly bad that it causes nausea all day long and produces a lowered physical condition; it was also said that fumes from the river had caused \$10,000 damages in Belleville alone by their action on the paint on houses. The Commission has sent notices to the governing bodies of the different municipalities asking for contributions to meet the expense of preparing plans and specifications, and Newark, Passaic, Belleville, Orange, Bloomfield, Montclair, Harrison, Kearney and Arlington have responded.

PHILADELPHIA, PA.—So many changes are called for by the new State law governing the sale of meats, that the local health authorities have found it impossible to enforce them immediately, owing to the many restrictions and sanitary safeguards insisted upon. A new set of rules has been prepared and published by the local Bureau, so that no storekeeper or dealer can plead ignorance when brought up for infringement. Inspection is made, and each place of business is given a thorough overhauling before the license is granted to an owner of a city store or abattoir, the report as to the lighting, sanitary arrangements and cold-storage facilities going directly to the head of the Bureau, and as the result many men handling meat will have to make changes in their storerooms or packing establishments. The rules include pork-packing establishments, fish houses, poultry shops and killing places, as well as meat shops and slaughter houses.

PROVIDENCE, R. I.—Commissioner of Public Works Slade has announced that a contract has been made by the Committee on the City Engineer's Department and the town of Cranston, covering the use of the main trunk sewer at Arlington by the Narragansett Brewing Company, and the treatment of the sewage emptied into it. The town of Cranston is to pay interest on the cost of construction of a section of the main trunk sewer plus an allowance for depreciation, the two sums aggregating \$657.15 per annum, plus \$6.24 per million gallons for all sewage treated in common with that received at the precipitation tanks from the various parts of the city. In addition to building the connection from the brewery down to the trunk sewer, the town of Cranston is to provide a meter for measuring the sewage, is not to allow gasoline or any other form of explosive or deleterious liquids or matter to be deposited in the sewer, and will not make other connections for any person or persons without the consent of the city of Providence.

SAN FRANCISCO, CAL.—The Board of Health in its efforts to eradicate the plague has declared war on rats, because of the disease-carrying possibility of the rodents. Council has empowered the Board to expend whatever funds necessary to exterminate them, and particular attention will be paid to sewers and alleys where they thrive. A resolution has been adopted by the Board to offer a bounty of ten cents on every rat caught in the city and county of San Francisco and delivered to the Health Officer.

UNION, N. J.—The Board of Council has passed an ordinance to establish a Board of Health for the town,

to consist of seven members. The term of office shall be four years, and the members divided into several classes in such manner that the term of office of not more than three members shall expire in any one year.

WASHINGTON, D. C.—The annual report of Henry B. Davis, Inspector of Plumbing, shows that during the fiscal year ending June 30 last, 32,100 inspections had been made, an increase of 1,915 over the previous year, and 4,763 over 1905. Inspector Davis says that the complaint of water in the cellar is one that causes more inspection than any other, and that last year, in order to locate a leak, aniline yellow powdered dye has been used on supposed defective sewers. A small amount of this dye colors a large quantity of water a yellowish green tint, and it is a most positive proof that the sewer of the adjoining property is leaking when the colored water appears in the cellar where the accumulation is complained of.

Water Works

BURLINGTON, Vt.—The first cleaning of the city's reservoir under the administration of Superintendent of Water Works J. F. Kidder was recently made. The water is lowered four feet at a time and men clean and scour the lining with brushes as the successive portions are exposed. While one reservoir is being cleaned the city's supply is taken from the other.

ELIZABETH, N. J.—The Middlesex Water Company has acquired about one hundred and fifty acres of land in Union County and thereby secured for a reservoir a watershed three miles long, which will become a new source of water supply for Elizabeth, and relieve any apprehension of future water famines. The new watersheds embrace some fifteen farms, located just north of Rahway's city line, where a core dam 600 feet long is now being erected. The water which will feed the reservoir has a flow of 400,000 gallons a day, which will flood one hundred acres of land and will come some twenty-two miles from the Blue Ridge of the Orange Mountains. The reservoir will have a capacity of 250,000,000 gallons of clear, soft water, which will be filtered and kept free from contamination of any sort. The company will supply Roosevelt, Chrome, Woodbridge, Carteret, North Plainfield, Metuchen, Sewaren, Port Reading, and hamlets and townships in Middlesex and Union counties.

KANKAKEE, ILL.—The Kankakee Water Company contemplates filing a petition with the Circuit Court setting forth that the City Council has passed an ordinance regulating the charge for water in the city, and the charges are unreasonable and work a hardship upon the company. The present price is a flat meter rate of fifteen cents per thousand gallons, and the water company is compelled to attach meters where demand is made in case the total charge for water amounts to \$12 per year or more. The water company hopes to have the prices of water as fixed by Council set aside and a new rate established.

LAWRENCE, MASS.—Hiram F. Mills, of the State Board of Health, furnishes statistics in an addition to the annual report of the Water Board to support his assertion that the filtration of the Merrimac river water, used by the city as a source of its domestic supply, has decreased the number of deaths 5,500 from its installation to date. Mr. Mills states that when the polluted river water was used for drinking purposes the death rate had been continually increasing until 1892, the year before the filter was built, the deaths reached the rate of 26 per thousand of inhabitants per year. In 1894, the year after the installation of the filter, the rate had been reduced to 19 per thousand, and in 1906 to 17½.

RICHMOND, IND.—The improvements made by the Water Works Company at the reservoir east of the city

are designed to overcome the necessity of applications of copper sulphate in order to kill microscopic plant growths. The new retaining walls are of cement and will prevent the seeping of mud, and thus render impossible the growth of the objectionable cara plant, the existence of which in the reservoir, and its taste, instigated the plans for the big improvement.

SAN FRANCISCO, CAL.—John S. Parry, Fire Commissioner, recently visited New York to inspect the high pressure water system which is now being installed. Mr. Parry states that it is the intention of the people of San Francisco to call a special bond election to provide means for building an auxiliary high pressure water system. It is planned to build a reservoir on Twin Peaks at an elevation of 655 feet, with a capacity of 20,000,000 gallons, with mains to run from the ocean and empty into the reservoir, the city to be practically gridironed from the three principal mains. A dividing wall will be built in the reservoir to enable one side to be used should the other need cleaning, and also in order that one side might hold 10,000,000 gallons of fresh water and the other side an equal quantity of salt water. Mr. Parry believes that if these plans are consummated sufficient reduction in insurance rates will be made by the underwriters so that the savings on premiums in fifteen years will pay for the entire plant.

NEW BRIGHTON, S. I., N. Y.—Commissioner Shaw, of the Board of Water, states that the engineers have completed the wash borings for the location of the mains to connect Staten Island with Brooklyn and Manhattan after the Catskill supply has been tapped. He says the steel mains under the Narrows will be about eighty feet under water, and the final site of the pipes will be between points designated by the War Department. The wash borings indicate a rock bottom under the channel, and undoubtedly the engineers will blast out a trench in the rock large enough for the steel mains, which afterward will be overlaid with cement, covering them so that anchors from passing vessels will not disturb them.

WEST SPRINGFIELD, MASS.—As the result of a visit of Chief Engineer X. H. Goodnough, of the State Board of Health, rules have been formulated by that Board governing the sanitary conditions of the water supply in West Springfield. A copy of the rules, which are very rigid, has been sent to the Water Commissioners of this town, and copies will be posted near all the water supplies and sources, probably by the State Police, and any violations will be prosecuted by the State. The rules not only relate to the Bear Hole water system, but cover the entire water supply of the town.

Street Lighting and Electric Power

DALLAS, TEX.—The City Chemist has been instructed to analyze the gas that is furnished to the citizens by the Dallas Gas Company. This was decided because of the number of complaints that reached the Commission relative to the quality and the pressure of the gas. Samples have been taken from the mains at various places and times and under a number of conditions, so as to arrive at an average in the final summary of the facts ascertained.

HOLLANDALE, MISS.—At a meeting of the taxpayers called by the Mayor and Board of Aldermen to devise ways and means of raising funds to continue running the light and water plant, it was decided to double the water tax from 50 cents per month per hydrant to \$1 per month for each hydrant and 20 cents per head for stock per month instead of 10 cents per head, as the old rate. This raise in water tax is expected to meet the monthly deficit of \$60, and as it is only a few weeks

until city taxes are due, the Board decided to raise the ad valorem tax rate from 7 mills to 10 mills. The taxable property of the town is at present about \$300,000. This will give the city an annual income of something over \$3,000 from this source, but out of this fund there is an item of \$1,800 per year as interest on bonds, the balance to be placed to a sinking fund.

JACKSONVILLE, FLA.—Superintendent Ellis states, in his report on the electric light plant, which is incorporated in the report of the Board of Trustees for the Water Works and Improvement Bonds for the year ending December 31, 1906, just issued, that "the receipts from lighting and power for the past year amounted to \$223,684.29, an increase over last year of \$37,614.81. The cost of operating the plant was \$112,965.12. The earnings of the plant were \$110,719.17, of which sum \$60,128.48 was expended in new machinery, boiler, transformers, meters and line extensions. The output of current for the year amounted to 4,610,493 K. W., for which was received 4.85 cents per K. W. The cost per K. W. of current delivered at the switchboard, based on station expenses, \$71,407.79, was 1.54 cents per K. W.; based on total operating expenses, \$112,965.12, it was 2.45 cents per K. W."

ROCHESTER, N. Y.—Nearly sixty state, county and city officials, with the representatives of all the commercial and water interests of Rochester and the Genesee Valley, recently investigated the water storage proposition on the upper river. The proposed plan is to erect a dam at Portage, south of the Erie bridge, 118 feet in height, which will form a lake approximately eleven square miles in area, at an estimated cost of \$3,500,000. It is believed to be possible to regulate the flow of the Genesee river by impounding 15,000,000 cubic feet of water, and create at the dam site 30,000 horsepower, which can be transmitted to Rochester by wire, and that the water power of the city can be increased from 2,500 minimum to a permanent 30,000 horsepower. It is thought that this will give to Rochester manufacturers horsepower as low as \$8, a cut of half in the price now charged by the Niagara Falls Company for the electric current it is receiving from Niagara Falls and reselling in Rochester at an advanced price.

Fire and Police

AUGUSTA, GA.—As a preliminary toward enforcing the fire laws and compelling property owners to erect fire walls, fire escapes, stand pipes, and other equipment, Nisbet Wingfield, Commissioner of Public Works, and F. G. Reynolds, Chief Fireman of the Augusta Fire Department, recently made a thorough inspection of the buildings in the city. Special attention was given to fire escape facilities on buildings of a semi-public character, centrally located, where large numbers of workmen are employed. The city officials have determined to ascertain the state of the fire protection appurtenances and rigidly enforce all ordinances and regulations.

BRIDGEPORT, CONN.—Schemes for a proposed fireboat are being agitated by the citizens, to be used in connection with fires along the local harbor front and to assist as an auxiliary in cases of threatening fires within two or three blocks of the harbor of the Pequonnock river. The plan embraces a large and powerful tugboat equipped with heavy pumps which can, when needed, be used for fire purposes, the tug to be used about the harbor in doing towing when the city gets its new wharf south of the present city dock at the foot of Wall street. It is thought by the promoters that a city tug, equipped as a fire boat, could do work enough not only to pay for its maintenance, but also pay for itself, as dividends from harbor work are large.

LANCASTER, WIS.—The fire alarm system of the town is causing insurance men no end of worry, and Alderman Louis Fisher has taken up the cause of the agents. At a recent fire the alarm failed to respond. Ward fire bells were tried, but failed, their support being rotted, and the ropes either missing or inaccessible.

LYNN, MASS.—Fire Chief Harris is of the opinion that the ordinance requiring the installation of standpipes in buildings of a greater height than fifty-five feet has been fully justified by the test recently made of the auxiliary fire apparatus, which demonstrated that, with a pressure of two hundred pounds at the engine yielding fifty pounds pressure on the seventh floor, it was possible to throw a solid stream of water at least 60 feet and flood buildings across the street. President Paul, of the Board of Underwriters, says he considers the test a satisfactory one, but that the city should also have a water tower; that the range of pipe is exceedingly limited, while the tower can be moved at will, and the stream directed where it will do the most good. Mr. Paul also recommends replacing the old cement-lined water pipes in the streets with newer and larger ones before installing high pressure service.

NEW YORK, N. Y.—A yearly chart has just been completed covering 6,357 fires in Manhattan and the Bronx and calling attention to some interesting facts. It is estimated that fires started by carelessly dropped matches and cigarettes cause New York City a loss of about \$2,500,000 each year. The city has an average of over 25 fires every day, and fire losses in twelve months from all causes aggregate something like \$10,000,000. Every time an alarm comes in, whether it is false or not, the cost to the city is \$50 for wear and tear of the fire apparatus. The city also pays out something like \$500,000 for damage done to asphalt pavement by children's bonfires in the streets.

PASADENA, CAL.—The Annual Report of the Pasadena Fire Department states that the total number of fires during the fiscal year ending June was 112. The total loss amounted to \$23,000, while the insurance on the same was \$20,900, so that the uninsured loss for the year was only \$2,100. Twenty-four were caused by bonfires and the burning of brush, and ten by children playing with matches. Other causes were crossed wires, 6; ashes and hot coals, 6; cigars and cigarettes, 4; fireworks, 3; lighted lamps, 3, and of the small blazes from various causes not mentioned in the report there were 27. During the year there were but four false alarms.

PORTSMOUTH, VA.—Mayor J. Davis Reed and Chief of Police Tynan believe there is urgent need of more police officers for the city, and especially for Park View. Mayor Reed points out that only two police officers patrol Park View and Lincolnville at night when there should be twice that number. The Mayor states that heretofore the Councils have not seen fit to allow a sufficient number of men on the police force, but he now intends to exert himself getting the number of patrolmen increased.

ROME, N. Y.—Owing to the recent fire which destroyed Wiggins Block in Rome, the subject of a more prompt means of transporting fire apparatus from one city to another has been agitated. In order that some definite action may result, Mayor Albert R. Kessinger, of Rome, has taken the initiative and sent letters to the Mayor or President of Utica, Oriskany, Whitesboro, Yorkville, New Hartford, Clinton, Little Falls, Herkimer, Ilion, Frankfort, Camden and Boonville, in which he states that it has been suggested that one or more properly arranged trolley flat cars or other appliances might be secured and located so as to be ready for instant service, and asks each official addressed if his town will send one or more representatives to a conference at an early date to consider this matter and outline a plan.

Government and Finance

CHICAGO, ILL.—The proposed new charter for the city, granted by the last Legislature, has been defeated. It was intended to provide for a change in the methods of taxation, abolish various taxing bodies, and concentrate the power of tax levied for city, park, school, and library purposes in the City Council; it also provided that the city might, by a referendum vote, issue bonds up to 5 per cent. of the total actual valuation of taxable property in the city. It divided into fifty wards, each of which was to be represented in the City Council by one Alderman, at a salary of \$3,500 per year. There was great opposition to the new charter by reason of the power of the taxing bodies to levy on property to as high as 7 per cent. of the assessed valuation.

ORANGE, MASS.—A large majority of the townspeople are much incensed over the method taken by Tax Collector T. S. Mann to collect the town taxes, and they threaten to hold a special town meeting and oust him from office. As a means of impressing the tax obligation upon delinquents he has caused "that tax" to be painted in large white letters on the sidewalk of every street corner.

ROCHESTER, N. Y.—The East Side Savings Bank is the lowest bidder on city notes, and the \$200,000 worth was sold to that institution by Comptroller Williams at 5.49 per cent. Had it not been for this bid, it would have been necessary to advertise the sale again, for the amount offered by the other bidders combined was not sufficient to cover the issue. This issue was to take up \$100,000 of local improvement notes which fell due on September 12, the other \$100,000 being for new work. The bidders were as follows: Broadway Savings Institution, New York, \$10,000 at 6 per cent.; Rochester Savings Bank, \$100,000 at 5.50 per cent.; Genesee Valley Trust Company, \$50,000 at 5.75 per cent.; East Side Savings Bank, \$200,000 at 5.49 per cent.

SOMERVILLE, N. J.—The Board of Commissioners of Somerville has decided to appoint a Legislative committee to endeavor to have a bill passed to enlarge the powers of that body. Under the present charter there are no means to borrow money for unusual expenses. This year the Board has found it necessary to erect a new engine house. In doing so it has used up nearly all the available funds and the streets of the town are in bad condition. It is now desired to pave Main street with brick and concrete at a cost of about \$12,000, and the Board would like to borrow the money so that the work can be done without delay. President Charles C. Kenyon will be at the head of the committee, and will name the other two members.

Refuse Collection and Disposal

DALLAS, TEX.—Street Commissioner Doran has found much difficulty in enforcing the sanitary laws, as, aside from the street cleaning force, the city has but two men with wagons to haul away all of the trash accumulations in the alleys. Commissioner Gillespie says if Dallas is to be kept clean, the authorities must have power to compel compliance with laws, and the Board of Health is of the opinion that there might well be licensed garbage haulers, and a contract made. The matter is being agitated and decisive action is expected to be taken in the near future.

NEWARK, N. J.—In order to reduce the cost of hauling refuse long distances, Chief Engineer M. R. Sherrerd has suggested a change in the wording of the contemplated agreement between the Board of Works and the Public Service Railway Company, as the present franchise of the company will not permit of its carrying garbage and ashes on its cars without granting permis-

sion to do general freighting also, a privilege which has been expressly denied by the city. Mr. Sherrerd's proposal is that the contractor shall provide the cars and the necessary labor to operate them, and the city make the arrangement with the company for the use of its tracks and power. When it is ascertained what reduction each contractor will make if this manner of transportation is adopted, the Board will be able to judge if the amount saved on the contract is sufficient to warrant its making the arrangement with the company.

Parks and City Beauty

BANGOR, ME.—The Park Commissioners have received the report of Forester John Appleton, who has reported that many trees in State street have been found on which were limbs destroyed by coming in contact with live electric wires, that all wires and dead limbs have been removed, and everything done to prevent further harm. Mr. Appleton also states that a source of damage to Bangor's trees comes from horses gnawing bark from the trunk, and suggests that an ordinance be passed to prevent owners of horses hitching them to the trees. He also recommends that the trees be systematically trimmed. Mr. Appleton has been instructed to continue his work in other streets.

EAU CLAIRE, WIS.—John S. Owen and other citizens interested in the establishment of a public park for recreation and pleasure, are planning to purchase the land along the banks of the Chippewa river, from the Grand avenue bridge to the site of the old Water street bridge, and set it aside for park purposes. It is said to be an ideal location for the purpose, and it is planned to beautify the place so extensively that it will compare favorably with any of the parks in that section.

GALVESTON, TEX.—The City Commission has passed an ordinance to protect all the esplanades and parks of the city from careless or malicious individuals. It is said that many drivers have disregarded beauty spots and driven over palms, oleanders and other ornamentation in a reckless manner. In the past the residents could only protest, but this new enactment places a weapon at their service that will enable them to call on the police and have arrests made and fines placed that will unquestionably cause careless drivers to respect the lines of driveways more carefully in the future.

JAMESTOWN, VA.—The report of Charles Mulford Robinson, of Rochester, N. Y., who was retained as civic expert by the new Board of Park Commissioners, has been submitted to the Commission. Starting out with the proposition that civic beauty pays, Mr. Robinson proceeds to show in detail how it may be made to do so in Jamestown. The purchase of cheap lands of little value for other purposes is recommended. A civic center should be established around which public and semi-public buildings should be grouped. Playgrounds and athletic fields should be provided. Several small "neighborhood outlook" parks should be selected. Parks or playgrounds along the river connected by a drive, should be laid out. The construction of hillside drives encircling the city would be a matter for later development.

JERSEY CITY, N. J.—Mayor Mark M. Fagan has completed negotiations for the purchase of a public park site for the Twelfth Ward, on the west side of the Palisades, comprising one hundred city lots, and commanding a fine view of the Hackensack and Passaic rivers. The price of the land was \$46,000, and the Mayor has induced the Board of Finance to appropriate, in addition to the purchase price, money to improve it during the coming year. Mayor Fagan personally conducted the details of the transaction and selected the site.

ST. LOUIS, Mo.—Park Commissioner Scanlan, in a report of the Park Department, made to the Board of Public Improvements, has recommended the establishment of six new parks. Mr. Scanlan suggests that the old Fair grounds, which are now to all intents and purposes a park with old trees, good roads and other advantages, should be acquired now, while it is available. Other locations are mentioned as possible sites where it is thought parks would add to the comfort of the residents and visitors stopping at downtown hotels. The proposed park in front of the Union Station has been discussed for some time, its purpose being to beautify the city in the eyes of travelers coming to the city. The Park Commissioner condemns the building of quasi-public structures on park property and recommends that it be prohibited.

SHARON, PA.—In connection with the recreation park which is to be made by the F. H. Buhl Club, there will be an athletic field, baseball park and in all probability a one-mile horse-racing track, also a swimming pool covering an acre of ground and an artificial lake covering several acres. A steel pavilion is to be built with a seating capacity of 2,000. In addition to the 150 acres, Dewey Park, adjoining, has been secured.

Rapid Transit

BOSTON, MASS.—Rapid progress is being made on the new Washington street subway, the walls and arch of roof of which are now complete, and the engineer believes the work on the last section of the tunnel will be finished by December. The Water street station is completed, but it will take about two months more to finish the Winter street station, and the Summer street station will be begun at once, the contract having been given out and the papers signed. In order to give more height to the new tunnel where it passes beneath the East Boston tunnel, the concrete bottom of the latter tube will be replaced by a double set of steel beams, thus flattening the bottom slightly. The steel beams will be incased in cement.

MONTGOMERY, ALA.—An ordinance has been passed, which will go into effect December 1, providing a complete system of laws for the regulation of the Montgomery Traction Company, and calling for well-equipped cars, readable signs and the separation of the two races. It also provides for a Street Car Inspector, whose duty it will be to judge as to the competency of motormen and conductors and to inspect all cars. Conductors and motormen are also required to pass an examination to be made by the City Electrician, who will issue a signed certificate stating that the applicant is familiar with the rules and regulations of the street car company in regard to signals, air-brakes, hand-brakes, controllers, fenders and other appliances, and is capable of operating cars.

TERRELL, TEX.—On the proposition of the Dallas Interurban Railroad representatives, who recently visited this city, the Commercial Club recommended that Terrell proceed to raise the required amount to secure the road. The proposition submitted is that Terrell take \$100,000 preferred stock in the new line and secure the right of way in the city and to the next town to the west.

NEW YORK, N. Y.—The New York City Railway Company has offered to put in operation as soon as possible 100 of the huge cars known as the Montreal type, each of which holds 65 passengers and which will take on no more when the seats are filled. Each car has a large platform front and rear. On the back platform is a pole which will divide the passengers getting on from those getting off. The conductor will stand at that place and collect fares as people get on. Passengers can get off at the front platform, but no passengers can get on.

Miscellaneous

AUBURN, N. Y.—A movement has been started by the city officials to ascertain whether the municipality is not entitled to dividends on the stock it holds of the old Southern Railroad Company. When that company was organized the city bonded itself for about \$500,000 to assist in making the enterprise a success. It is alleged that a large amount of stock was issued by the railroad company to the City of Auburn in lieu of these bonds. Later the Lehigh Valley Company of Pennsylvania organized a holding company known as the Lehigh Valley Company of New York, which leased the Southern Central line, running from Sayre, Pa., to North Fair Haven. Since this company was formed the city has not realized any income from its stock. After a diligent search, covering a period of three months, the stock has been found in an old "strong box" in the City Hall, and an inquiry will be made to ascertain whether the Lehigh Company has diverted traffic to its other lines in order to deplete the earnings of the Southern Central.

BOSTON, MASS.—The initial steps have been taken toward a municipal hospital for consumptives by the opening of an out-patient department at No. 13 Boroughs place, thirty patients presenting themselves opening day. A prominent feature is the roof garden, provided with canvas canopy, growing plants, reclining chairs and couches, where patients will wait when it is necessary to do so, instead of indoors, and luncheons of eggs and milk will be served. Examining rooms are on the first and second floors, and on the third floor is a well-equipped laboratory, where physicians can carry on their investigations of tuberculosis. There are separate rooms for the examination of nose and throat troubles. Later it is proposed to centralize the work in a commodious hospital on the Conness estate of fifty-five acres in Mattapan. Dr. S. F. Cox is superintendent; Dr. Edwin L. Locke, chief of staff, and Dr. T. J. Murphy, assistant; Dr. Cleaveland Floyd is the dispensary physician, and Dr. John T. Sullivan, assistant. The trustees of the institution are Edward F. McSweeney, chairman; Herbert F. Price, secretary; Dr. James J. Minot, Mrs. Margaret G. O'Callaghan, Miss Isabel F. Hyams, Dr. John F. O'Brien and John E. Potts. Superintendent of Nurses, Miss Elizabeth Upjohn. Three nurses will assist in the house, but spend most of their time in visiting the homes of the patients to find out their actual needs, and also to look into the condition of other members of the family, and thus do a work of prevention.

CARTHAGE, MO.—Fire Chief C. M. Shipps has been ordered to ring the fire bell at 8:30 o'clock each evening as a curfew bell, and thus warn all children who are on the street that it is unlawful for them to be out later unless accompanied by a proper guardian.

WASHINGTON, D. C.—The Commissioners are making an effort to inaugurate a novel innovation in connection with the proposed public baths in the shape of public laundries. While the idea is new in this country, such places are common throughout Europe, and it is the belief of Commissioner Henry L. West that a public laundry should be connected with every public bathhouse erected in the District, each laundry to be supplied with not less than thirty stationary washtubs, where the women of the poorer classes can take their clothing to be washed, requiring only a trifling sum for soap and other incidentals. A drying-room would also be provided, where either hot air or steam would be used to dry the clothes. The Commissioner thinks that such an establishment will be an incentive to cleanliness and healthfulness, and is of the opinion that these public laundries could be equipped for about \$1,000 each.

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Municipal Interest

CONTRACT FORFEITED—CONTRACTOR'S RIGHTS

Pittsburg vs. Jonathan Clark & Sons Co.—The Jonathan Clark & Sons Company contracted with the city of Pittsburg to build a reservoir in Highland Park, at an estimated cost of \$420,000. Provision was made for monthly payments of 85 per cent. of the cost of completed work and a final estimate was to be made that would be conclusive as to prices and quantities. After the work had proceeded some time, the Director of Public Works sent a notice to the contractor stating that the work had been unnecessarily delayed and the conditions of the contract violated, and that therefore the Director, exercising the power vested by the contract in him, ordered the work stopped. The contractor was ejected and the work finished by his bondsmen. The contractor sued for recovery of the retained percentages on the monthly estimates and for some items of extra work. The city in defense set up the final estimate clause providing for the estimate of the amount due on the work after its completion and the stipulation that the Director shall be the final arbiter between the parties in all matters of dispute. The court held that the provisions of the final estimate clause contemplated the completion of the work by the original contractor, and that they did not in terms apply to and are inappropriate to the extraordinary contingency of the party being put off the work and being prevented from completing it. The plaintiff was entitled to recover what is justly due for its materials and work, subject to specified charges and deductions on account of actual expenses incurred by the city. Further, the court held that the arbitration clause could not be insisted upon for the ascertainment of the balance due the contractor, as the clause under which the Director acted provides by implication for a determination of the rights of the parties by regular judicial proceedings. Judgment was entered for the plaintiff's claim of \$81,341.—United States Circuit Court of Appeals.

DEFECTIVE WAGON SCALE

O'Neil vs. City of New Haven.—A wagon scale owned and operated by private parties, but sometimes used by agents of the city without charge, was located in an acute angle formed by the intersection of two streets, the platform being wholly within the angle formed by the curb line, extended. Its location was such that no traveler would knowingly and intentionally make use of it as a part of the highway. The plaintiff, O'Neil, was employed carting crushed stone for the city, and it was part of his duty to stop at the scales and have his load weighed. In the act of having his load weighed, as the plaintiff was sitting on his seat the platform gave way and he was injured. It was charged that the city failed to perform its duty to the plaintiff as a traveler upon one of its highways. The court held that in departing from the traveled part of the highway onto the scale the plaintiff ceased to be a traveler, and was not entitled to recover against the city on that count.—Supreme Court of Errors of Connecticut.

RIGHT TO ERECT TELEPHONE POLES IN STREET

Northwestern Telephone Exchange Co. vs. City of St. Charles.—The statutes of Minnesota were amended in 1881 so as to give a telephone corporation the right to use the public roads and highways for the purpose of erecting poles to sustain their wires. The complainant company was organized in 1878. In 1893 and 1901 acts were passed requiring telephone companies to obtain a franchise before erecting poles and wires in any city or town. The complainant company made no attempt to use the streets of St. Charles until 1896, when it received from the City Council authority to erect poles for a telephone line which was part of its long-distance system. In 1899 a connection was made with the exchange of a local company and general business transacted. In 1905 the contract with the local company expired, and application to Council for a local system was made and refused. The Telephone Company sought to set aside an ordinance forbidding the erection of telephone lines within the city without special authorization by ordinance or resolution. The court held that the acts regulating the building of telephone lines in highways were within the power of the Legislature.—United States Circuit Court of Minnesota.

DEFECTIVE STREET

Harrell vs. Mayor and Council of Macon.—The plaintiff, a woman 62 years of age, was hurt by falling into a ditch on the side of a public alley which was used generally as a thoroughfare. There had been a change in grade of the sidewalk in front of the plaintiff's house, leaving a high step from the old sidewalk to the new sidewalk. This step could be avoided by following the old sidewalk and using the alley. The ditch had been open several months, the plaintiff knew the situation well, and the city may be assumed to have had constructive notice of the defects. On the night of the accident the plaintiff was returning home by the alley when an electric light near by went out. After waiting a minute in vain for the light to return, she proceeded, carefully feeling her way. When stooping down to feel for the trench, the bank caved in and she fell into the gully. The court said it is the duty of the city to keep its streets and sidewalks in a safe condition for travel in the ordinary modes by night as well as by day, and if it fails to do so it is liable for damages for injuries sustained in consequence of such failure. The city contended that knowledge of the defect on the part of the plaintiff precluded her from recovering damages, and that when the light went out she should have gone the other way. The court held that the question of the plaintiff's negligence was solely for the jury to determine. The use of a sidewalk with knowledge of its dangerous condition may be evidence of negligence, but it is not negligence as a matter of law. As the plaintiff was deprived of her right of submitting her case to a jury by a judgment of non suit, the judgment was reversed.—Court of Appeal of Georgia.

FIREMEN DETAILED FOR THEATRE DUTY

Tannenbaum vs. Rehm.—An ordinance of the city of Mobile requires the Chief of the Fire Department to assign a fireman for duty at all performances in any theatre, who shall be paid by the manager of the theatre. A fireman so assigned was refused his wages and sued. The validity of the ordinance was questioned. The court said that many of the powers exercised by municipalities fall within what is known as the police power of the State, and are delegated to them to be exercised for the general good. Of this nature is the authority to suppress nuisances, preserve health, prevent fires and the like. The ordinance is not unreasonable, as the duty of protecting the citizens from dangers of fire in the exercise of the police power would seem to carry with it the right to employ the most effective means to that end, and this would include the right of designating competent agents or servants for the performance of such duty.—Supreme Court of Alabama.

THEFT OF BONDS

Town of Fairfield vs. Southport National Bank, et al.—Some bonds belonging to the city of Fairfield were deposited in the Southport National Bank by an agent of the city who was an employee of the bank. The cashier of the bank, Oliver T. Sherwood, had been engaged in continuously misappropriating the funds of the bank and falsifying the accounts. He took the bonds, pledged them for the payment of a loan, and the proceeds were received by the Southport National Bank. The court held that the bank was not liable for the acts of its cashier in taking from the vault of the bank the bonds that were placed there by an employee for his own accommodation. But as the cashier placed the proceeds of the bonds in another bank to the credit of his bank, such bank was liable to the plaintiff for the proceeds, though the deposit by the cashier was a payment by him to conceal his prior misappropriations.—Supreme Court of Errors of Connecticut.

PAUPERS—NEED OF ASSISTANCE

Town of Ripton vs. Town of Brandon.—The Vermont statutes provide that if a person is in need of assistance the Overseer of the Poor of any town shall on application relieve the person, and if he has not resided in the town for three years, supporting himself and family, and is not of sufficient ability to provide such assistance, the town furnishing the same may recover the expense from the town where he last resided for three years and supported himself and family. If a transient person is suddenly disabled and confined at any house, or is in need of relief, the person at whose house he is shall be at the expense of relieving and supporting the person until he reports his situation to the Overseer of the Poor of the town, after which the officer shall provide for his support. Held, that whether a person is poor and in need of assistance does not depend alone on the amount and value of his property, but on the exigencies of his present situation.—Supreme Court of Vermont.

SPECIAL IMPROVEMENT ASSESSMENT

Herman Construction Co. vs. Wabash R. Co. et al.—While a local assessment for a public improvement is not a tax levied for general revenue purposes, within the constitutional provision requiring uniformity of taxation, it is a tax in the sense that taxes are imposed on individual property receiving benefits from such improvements, different from the general benefit enjoyed by the property-owner in common with others. Special assessments for local improvements are a constitutional exercise of the State's taxing power. A special assessment for local improvement constitutes a lien only on the property assessed, and cannot be made the basis of a personal judgment against the property-owner. Under St. Louis Amended City Charter, providing that "all the property fronting on or adjoining an improvement shall be subject to a special assessment therefor," property part of a railroad's right of way contained in a special assessment district is subject to assessment.—Supreme Court of Missouri.

ASSESSMENT FOR GRADING AND PAVING

City of Sedalia ex rel. Taylor vs. Smith.—An ordinance entitled one for "the grading and paving" of a certain street, providing that the street "be brought to the established grade and paved according to the specifications herein contained," will be construed as one for paving and "for doing all excavating and grading necessary for the same" (after the street had already been brought to grade), in which case, under the laws of April 19, 1893, the ordinance would be valid, and not one for bringing the street to the established grade, in which case, under Section 100, it would be invalid for want of necessary steps; the specifications in the ordinance being only as to the reduction of the street to a plane, the thickness of the pavement, below the established grade; the grade as established by a previous ordinance, referred to in the ordinance in question, as shown by the profile and testimony of the City Engineer, being practically the same as the natural grade of the street; only "paving" being spoken of in the petition of the property-owners for the ordinance; the notice to contractors being to "paving contractors," though speaking of "grading and paving" the street; the two estimates filed by the engineer, one for "paving," the other for "bringing to grade and paving," being the same in amount, and no substantial work being required to bring the street to the established grade, neither the Constitution of the United States, forbidding a State to deny to any person the equal protection of the laws, nor the Constitution of Missouri, providing that taxes shall be uniform on the same class of subjects, is contravened by the acts of April 23, 1893, providing that a City Council may by ordinance include in a special assessment for street improvement the cost of bringing the street to the established grade, when, in its opinion, the general revenue fund of the city does not warrant an expenditure therefor.—Supreme Court of Missouri.

DEFECTIVE SIDEWALK

Yeager et al. vs. Berwick Borough.—The existence of a hole in a sidewalk covered by a board, so as to be invisible, for twenty-four hours is not constructive notice to the borough in which it is located, which has no actual notice of the hole, and hence the borough is not liable for injuries to a person who stepped on the board and was thrown into the hole by the turning of the board.—Supreme Court of Pennsylvania.

POWER TO LIGHT STREETS

City of Redlands et al. vs. Brook, City Treasurer.—The Municipal Incorporation Act of 1883 empowers municipal corporations to lay out, alter, improve, etc., street and other public highways, and to drain and light them, etc. Section 866 provides that municipal corporations of the sixth class may incur a bonded indebtedness whenever the Board of Trustees shall deem it necessary to supply a deficiency in the funds applicable to the payment of any expense which they are empowered to incur. It is held to give a city power to issue bonds to meet the expense of purchasing electric lighting for streets from a private company and of maintaining the streets and public places.—Supreme Court of California.

FRANCHISE—RIGHT OF WAY

Shreveport Traction Co. vs. Kansas City, S. & G. Ry. Co.—City authorities have no legal power to create corporations or to grant franchises. This can be done by the State alone; but the city can concede the right of way through her streets. Such right is not a franchise in law. The privileges conceded are "secondary franchises," instrumentalities by means of which the corporate powers granted by the charter may be exercised.—Supreme Court of Louisiana.

MUNICIPAL DEVICES

New German Street Car Fender

SOME details of a new street car fender recently introduced on the electric lines of Dresden, Germany, have been furnished by T. H. Morton, American Consul. The only visible part of the protective mechanism is a projecting strip extending in front of the forward platform of a car and attached to a shaft issuing from hence to the latter. If this comes in contact with any object—a person, an animal, or the like—it yields readily to the pressure and the shaft is forced backward. As a result of this retreating movement, simultaneously the electric current is cut off, an automatic brake is applied, and a broad fender, three feet further back, immediately in front of the wheels, drops to the level of the rails and gathers up whatever is in its path. The mechanical adjustment is so perfect that during the continuous daily experiments, carried on for many months with animals and manikins, there has been no failure to pick up safely and easily the obstacles encountered. Illustrations of this device are on file at the Bureau of Manufactures, Washington, D. C. The invention is controlled by the City Council of Dresden.

Road Locomotive

A ROAD locomotive, which serves also as a modified farm traction engine, is made by Russell & Company, Massillon, O. The farm traction engines, when used for heavier work than for which they were designed, have been found expensive to keep in repair. A regular steam roller, when used for traction purposes, has hardly sufficient power to carry its heavy roller over poor roads. In manufacturing the road locomotive a number of good features have been incorporated in the design, such as a patent smokeless furnace; a power steering gear, easily converted into hand steering; a double admission valve to effect steam economy; a reversing gear, using but one eccentric and doing away with all links and wedge blocks; an anti-friction metallic piston; a large water tank, carrying water enough for six hours' work; double speed crucible steel gearings; large front and rear wheels, with renewable sprockets and renewable bushings, and a flywheel friction clutch for quickly throwing the engine in and out of gear. The road locomotive also has a single engine, automatic governor, a winding drum and steel cable, enabling the machine to be used as a crane or for hauling and plowing. The full-length cab protects the machine from the weather, making the use of tarpolins unnecessary. These road locomotives are made in two sizes, 25 and 50 horsepower. It is claimed that the large size machine will pull a load of 40 tons on a good hard road up a 6 per cent. grade and a load of 25 tons up a 10 per cent. grade. The working expense is estimated by the manufacturers to be from $2\frac{1}{2}$ to 5 cents per ton mile, for short distances, with return trip empty.



BREAKING UP ROADWAY IN SAN JOSE, CAL.

BOOK REVIEWS

Pollution of Illinois and Mississippi Rivers by Chicago Sewage. By Marshall O. Leighton. Water Supply and Irrigation Paper No. 194, of the United States Geological Survey.—Most of our readers are probably familiar with the fact that the State of Missouri instituted, in 1900, a suit against the State of Illinois and the Sanitary District of Chicago, for an injunction to restrain the latter from discharging sewage into the Mississippi by way of the Chicago Drainage Canal. "The testimony taken in this suit comprises the best symposium on river pollution, its biological and chemical aspects, and its general and special sanitary significance that has ever been assembled. The contentions of both parties to the suit are supported by the most eminently qualified men in the United States. The evidence presented and the discussions recorded are therefore of unique importance. The final record of testimony occupies 8,000 printed pages, much of which is irrelevant. This digest of testimony is the result of an attempt to recover the valuable material and present it in a concise form. A consistent endeavor has been made by the reviewer to eliminate all personal opinions with reference to the issue and to make an impartial presentation of so much of the testimony as in his opinion appears to be relevant and of scientific importance." Mr. Leighton has used excellent judgment in gleaning the relevant from the irrelevant, and has presented in the order in which they were given the testimony of the various experts. It appears to us that this abstract might have been more valuable had the evidence been arranged according to subjects dealt with, rather than to the experts contributing it. This abstract covers 355 pages, and contains many tables and descriptions of experiments made solely for use in this case. The aim has been to present that phase of the testimony which would be interesting to scientific men rather than to legal; the report closes, however, with the full text of the opinion of the court as rendered by Mr. Justice Holmes. Eighteen witnesses appeared for the plaintiff and twenty-five for the defendants. Among those appearing are such well-known names as Benezette Williams, J. L. Van Ornum, George C. Whipple, Allen Hazen, William T. Sedgwick, George W. Fuller, George S. Williams, Rudolph Hering, Robert Spur Weston, William F. Mason, Leonard P. Kinnicutt, John W. Hill, John W. Alvord and E. E. Lochridge.

Commission of Gas and Electricity, New York. Report. 1906. Frederic E. Gunnison, John C. Davies and Lucien L. Shedd, Commissioners.—This Commission held its first hearing August 8, 1905. In order to compile statistics regarding lighting companies, no such data hitherto existing in the possession of the State, a thorough canvass of 1,500 municipalities was undertaken. Altogether 408 companies and municipal plants were found. Appendix "C" contains detailed reports of companies as they existed June 30, 1905, including capitalization, amount of product, its quality and price, the number of lights supplied and other

information. Appendix "G" gives the statutes of the State relating to gas, electric light and power companies.

Commission of Gas and Electricity of the State of New York. Second Annual Report. 1907.—There were 435 corporations, municipalities and individuals under the supervision of the Commission. A large part of the work consisted in giving hearings regarding complaints as to the price of gas and electricity. More than fifty companies reduced their rates voluntarily. Appendix "D" gives abstracts of reports of corporations and municipalities engaged in lighting as they were June 30, 1906. In Appendix "E" reports are tabulated and classified according to character of service as "coal and water gas companies," "electric companies," "municipal lighting plants, gas," and the like. Appendices "F" and "G" deal with meters and inspection. Opinions of the Attorney General, court decisions, Federal acts and State statutes close the volume.

Thirtieth Annual Report, Board of Health, New Jersey. 1906. C. F. Brackett, President.—The Secretary's report, occupying about a quarter of the volume, consists of notes on various diseases and sanitary matters. Other contents of the report are: A list of the sanitary districts of the State and of licensed health officers and sanitary inspectors; reports on inspection of streams, infectious diseases of animals, work of the State Laboratory of Hygiene, inspection of creameries, sanitary examinations, ice cream factories, railroad stations, local boards of health, legal decisions and opinions, and vital statistics. An account is given of the first conference of State and Local Boards of Health.

PATENT CLAIMS

864,276. Metal Nosing for Concrete Curb and Other Structures. Henry H. Wainwright, Philadelphia, Pa. Serial No. 299,880.

In a metal nosing for concrete curb, the combination of the curved corner, body, web perpendicular to said body, and adapted to enter the mass of concrete and the head on said web, adapted to interlock with said concrete, substantially as described.

864,579. Water Meter. Wilhelm G. Volz, Stuttgart, Germany. Serial No. 339,772.

In a water meter, a casing having a chamber and divided by a partition provided with plugs of non-rusting magnetic material, indicating mechanism above said partition and a rotatable magnet also above said partition and driving the indicating mechanism, a rotatable magnet and speed-reducing gear for driving the same below said partition, a float wheel in the chamber and connected with said gear, and means for regulating the quantity of water flowing through said chamber.

864,958. Street Lamp. John Doyle, New York, N. Y., assignor to Municipal Lighting Company, New York, N. Y., a Corporation of New Jersey. Serial No. 218,648.

In a street lamp, the combination of a post having a pair of vertical supporting arms in fixed position relative thereto, a gas lamp between said arms, a reflector carried by the lamp and extending beyond the supporting arms, pivotal connections between the reflector and the arms, means for locking the lamp at will against movement in said arms, and means for supplying gas to the lamp, as set forth.

865,103. Deep-Well-Drilling Apparatus. James A. Jackson and John H. Dower, Brun, Pa. Serial No. 357,477.

In deep well drilling apparatus, a temper screw having a cross bar, a tee head having wheels or pulleys mounted at its opposite ends, flexible connections extending from the cross bar of the screw over the wheels or pulleys, and a counterweight attached to said connections; substantially as described.

865,311. Street Cleaner. Israel Ludlow, New York, N. Y. Serial No. 131,828.

In combination with a suitably supported casing, a conveyor arranged therein, a brush mounted within the casing, a hinged section on the casing extending above the brush, a

wheel carried by the hinged section, and teeth depending from the hinged section engaging the brush for cleansing the same, and mechanism for operating the brush and conveyor.

865,380. Excavating Wheel. Fitzroy N. Griffin, Chicago, Ill., assignor to Robert P. Dunton, Hancock, Mich. Serial No. 339,279.

In excavating apparatus, an excavating wheel comprising a double rim, and an excavating bucket pivoted between the sections of said rim.

865,427. System of Refuse Disposal. Arthur N. Pierson, Westfield, N. J. Serial No. 353,173.

In a system of refuse disposal, the combination of an inclosed garbage scow-berth, an exhauster, a furnace, and an exhaust conduit leading from the berth and controlled by the exhauster and entering the furnace in advance of the seat of combustion therein.

865,442. Gas Meter. Brewster H. Spangler, Philadelphia, Pa., assignor to The United Gas Improvement Company, Philadelphia, Pa., a Corporation of Pennsylvania. Serial No. 249,549.

A gas meter having its valve chamber superposed upon its bellows chamber and having a gas opening through which drainage may occur from the valve chamber to the bellows chamber, and gas inlet and outlet passages or conduits having their top portions throughout their lengths above the effective level of said gas opening, whereby they may drain into the valve chamber and thence into the bellows chamber, substantially as described.

865,456. Passenger Street Car. William S. Twining, Philadelphia, Pa. Serial No. 380,494.

In a car of the character described, a car body structure having a floor and landings, steps terminating at said landings, one of said landings being arranged below the floor of said structure and above the steps leading thereto and a cab for a motorman arranged within the body of the structure behind the lower landing and steps thereof.

865,504. Centrifugal High-Pressure Pump. Carl Lager, Baldwinsville, N. Y. Serial No. 209,898.

In a series-runner centrifugal pump, a series of separate annular case-sections, one for each runner, and means securing them end to end, each case-section having an annular waterway arched transversely, separate circular diaphragms interposed between and held by the meeting faces of the case-sections dividing the interior of the case into runner chambers and each provided with a water passage leading from its periphery inwardly through one of its end faces, and a runner in each chamber having its inlet communicating with the waterway in one of the diaphragms and its outlet opening into the waterway of its case-section, said runners having their inlet openings all facing in the same direction, and an external conduit connecting the waterway of one of the case-sections with the inlet side of one of the runner chambers and discharging against the inlet side of the first runner of the series.

865,578. Composition for Laying Road Dust. Carleton Ellis, Larchmont, N. Y., assignor to Ellis-Forster Company, a Corporation of New Jersey. Serial No. 375,806.

Composition for laying road dust comprising an emulsion containing waste sulfite liquor and a deliquescent salt, or an emulsion of concentrated waste sulfite liquor and an oily body.

865,597. Protractor. Willie L. E. Keuffel, Hoboken, N. J., assignor to The Keuffel & Esser Company, a Corporation of New Jersey. Serial No. 212,923.

An instrument of the class described, comprising a member having an apertured bushing provided with cross lines, an arm mounted to be turned around said bushing, and a spring interposed between said member and arm.

865,839. Drawbridge. George A. Wieland, Duluth, Minn. Serial No. 355,339.

The combination with a pivotally operating bridge, of accelerating means at the ends thereof designed to engage with the end piers of the bridge.

865,965. Art of Growing and Distributing Nitro-gathering Bacteria. George H. Earp-Thomas, Toronto, Ontario, Canada. Serial No. 352,768.

The process of developing a bacteriological culture, which consists in growing in a medium a plant inoculated with the desired bacteria while excluding all contaminations from said plant and medium.

865,968. Mold for Making Culverts, Conduits, and Similar Hollow Structures. Joseph Hickson, Mount Gilead, Ohio, assignor of two-fifths to Thad E. Buck, Mount Gilead, Ohio. Serial No. 371,103.

A mold including an inner member, a former spaced from and movable on the face of the inner member, and means for varying the distance between said former and inner member.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewage, Water Supply and Public Lighting—Fire Equipment and Supplies—Buildings, Bridges and Street Railways—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we can not guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
Street Improvements				
Pennsylvania...	Reading.....	September 25, 2 P.M.	Constructing subway, etc., under P. & R. Ry. at Spring St.....	Elmer H. Beard, City Eng'r.
Indiana.....	Blunton.....	Sept. 26, 10:30 A.M.	Constructing two gravel roads.....	Clem S. Brineman, Co. Auditor.
Missouri.....	Kansas City.....	Sept. 26, 11 A.M.	Eighteen contracts for street grading.....	E. A. Harper, City Engineer.
Minnesota.....	St. Paul.....	Sept. 26, 2 P.M.	Grading Charles and Valley Sts.; curbing Goodrich Ave.....	R. L. Gorman, Clk. Bd. Pub. Wks.
New York.....	New York.....	September 26, 3 P.M.	Furnishing 3,000 cu. yds. fine bank gravel; 4,000 cu. yds. double-screened Hudson River road gravel; topsoil or garden mould to parks Boros. Brooklyn and Queens.....	Moses Herrman, Park Board.
Illinois.....	Danville.....	Sept. 26, 7:30 P.M.	Paving Oakwund Ave., Green and Main Sts.; curb and pave Van Buren St.....	Board Local Improvements.
Indiana.....	Fort Wayne.....	Sept. 26, 7:30 P.M.	Grading Beaver Ave., constructing cement sidewalks, also for paving Knitters Ave. with vit. paving block.....	H. W. Becker, Clk. Bd. Pub. Wks.
New York.....	New York.....	Sept. 26.....	Grading, curbing, paving, asphalting, 27 contracts; over \$1,000,000.....	Louis F. Hafien, Pres. Boro. Bronx.
Ohio.....	Bellaire.....	Sept. 26.....	Grading and paving certain streets and alleys.....	R. E. Crow, Clk. Bd. Pub. Service.
Ohio.....	Middletown.....	Sept. 26.....	Constructing 25,000 sq. ft. cement walks, mile of curb, gutters, etc.....	N. G. Oglesby, Clk. Bd. Pub. Ser.
New York.....	New York.....	Sept. 27, 11 A.M.	Asphalt and asphalt paving, regulating, etc., various streets.....	H. S. Thompson, Act. Boro. Pres.
Ohio.....	Napoleon.....	Sept. 27.....	Constructing certain County roads.....	H. Rothes, County Commissioner.
Ohio.....	Malta.....	Sept. 27.....	Paving and curbing portion of Main street.....	Paul R. Murray, New Phila., Engr.
Ohio.....	Brown.....	Sept. 27.....	Constructing road improvement No. 64.....	R. E. Weaver, County Auditor.
Wisconsin.....	Racine.....	Sept. 28, 10 A.M.	Constructing 1,810 sq. ft. cement walk, 2,717 lin. ft. cem't curb.	P. H. Connolly, City Engineer.
Indiana.....	Greencastle.....	Sept. 28, 11 A.M.	Improving three macadam roads, 33,406 ft. long.	C. C. Hurst, County Auditor.
Indiana.....	Vincennes.....	September 28, 2 P.M.	Constructing 16,019 ft. of gravel road.....	County Commissioners.
Virginia.....	Manassas.....	September 28.....	Macadamizing streets of town; water and light plant.	O. E. Newman, Chm. Com.
New York.....	New York.....	Sept. 30, 11 A.M.	Regulating, grading, laying sidewalks, 5 contracts, Boro Queens.	Jos. Bermel, Boro. Pres.
Virginia.....	Portsmouth.....	Sept. 30, 8 P.M.	Furnishing 100,000 sidewalk paving brick; samples Sept. 26.....	Bascon Sykes, City Engineer.
Maryland.....	Takoma Park.....	Sept. 30, 8 P.M.	Grading, spreading and rolling stone and constructing 2,500 lin. ft. macadam roadway, Carroll Ave., also furn. 650 cu. yds. crushed stone.....	W. G. Platt, Mayor.
Ohio.....	Steubenville.....	September 30.....	Paving Reserve Ave. with fire brick.....	T. W. Vance, Clk. Bd. Pub. Serv.
North Carolina.....	Durham.....	October 1, 3:30 P.M.	Constructing 11½ miles macadam road, inc. 60,000 sq. yds. 6-in. macadam and 75,000 cu. yds. excavation, together with necessary pipe and reinforced concrete drains.....	Gilbert C. White, Engineer.
Montana.....	Billings.....	October 1, 8 P.M.	Gravel macadam, 58,653 sq. yds.; 3,000 ft. sewer, etc.; 17,480 ft. gutter; also 6,305 sq. yds. shale brick, Dists. 20 and 21.....	J. D. Matheson, City Clerk.
Ohio.....	Lima.....	October 1.....	Grading, curbing, paving, brick on concrete, Second St.....	L. L. Crumrine, Sec'y Bd. Pub. Ser.
New Jersey.....	Harrison.....	October 1.....	Paving Bergen St. with bitulithic; Je.sey St. with Mack block.	Bernard P. Walsh, Town Clerk.
Ohio.....	Massillon.....	October 1.....	Constructing brick pavement on several streets.....	J. A. McLaughlin, Clk. Bd. Pub. Ser.
Indiana.....	Spencer.....	October 2.....	Constructing 6,170 ft. gravel pike road, Jennings Township.....	Geo. O. Mitten, Co. Auditor.
New York.....	Brooklyn.....	October 2.....	Laying 11,385 sq. yds. asphalt, 10,205 sq. ft. cement walk, 17,215 ft. curb.....	Bird S. Coler, Boro. Pres.
Pennsylvania.....	Harrisburg.....	October 3.....	Constructing road 1 mile long, 16 ft. wide, Londonderry Twp.; 2 sections, 11,955 and 6,687 ft. long, 15 ft. wide, Benson Twp.	Jos. W. Hunter, Highway Com'r.
New York.....	Brooklyn.....	October 3.....	Repairing asphalt pavement, resurfacing walks, etc., in parks.....	Park Department.
Ohio.....	Cleveland.....	October 5, 11 A.M.	Completion of Miles avenue improvement.....	A. B. Lea, County Surveyor.
Indiana.....	Salem.....	October 7, 1:30 P.M.	Gravel roads: 24,165 ft. Washington twp., cost, \$11,949; also 6,733 ft. Monroe twp., cost, \$3,914.....	S. G. Ellis, County Auditor.
Wisconsin.....	Kenosha.....	October 7, 2 P.M.	Grading, paving 34,650 sq. yds. brick on concrete, 17,329 ft. stone curb, and 12,175 cu. yds. excavation.....	R. H. Moth, City Engineer.
Indiana.....	Decatur.....	October 7.....	Constructing macadam road in Root township.....	C. D. Lewton, County Auditor.
Indiana.....	Hartford City.....	October 7.....	Constructing 10,465 ft. and 15,185 ft. macadam road, Harrison twp.; also 15,775 ft. on line between two townships.....	L. W. Dougherty, County Auditor.
Indiana.....	Vincennes.....	October 8, noon	Constructing 8,000 ft. of gravel road.....	J. L. Ackerman, County Auditor.
Indiana.....	Covington.....	October 8, 1:30 P.M.	Constructing four gravel roads.....	Benj. F. Cornum, Co. Auditor.
Indiana.....	Crawfordsville.....	October 8.....	Constructing stone road, 13,253 ft. long, in Brown township.....	A. J. O'Reilly, Pres. Bd. Pub. Imp't.
Missouri.....	St. Louis.....	October 8.....	Paving portions of numerous streets and alleys.....	Jos. W. Hunter, Highway Com'r.
Pennsylvania.....	Harrisburg.....	October 9.....	Constructing road, 1,800 ft. long, 18 ft. wide, of brick, and 2 roads 4,300 and 2,500 ft. long, 22 ft. wide, Reynoldsburg Boro.; 13,200 ft. long, 16 ft. wide, Buffalo twp.; 21,507 ft. long, 16 ft. wide, Winslow Twp.	Jos. W. Hunter, Highway Com'r.
Pennsylvania.....	Harrisburg.....	October 10.....	Constructing 3 roads, 16 ft. wide, 21,538 ft. long, N. Huntington Twp.; 11,445 ft. long, Shirley Twp.; 1 mile long, German Twp.	Capt. C. W. Orwell, Eng'r Corps.
Ohio.....	Cincinnati.....	October 11.....	Constructing County roads in Section No. 600.....	Stanley Stugley, Pres. Board.
Alabama.....	Riverton.....	October 12, 11 A.M.	Paving, riprap and excavation at Colbert Shoals Canal.....	Maj. Wm. W. Harts, Eng. Corps.
Alabama.....	Athens.....	October 12.....	Constructing certain highways.....	C. D. Glaze, Pres. Road Com'n.
Indiana.....	Fort Wayne.....	October 12.....	Constructing 6,020 ft. macadam road, Monroe township.....	Geo. W. Lindemuth, Co. Auditor.
Ohio.....	East Cleveland.....	October 12.....	Constructing culvert on Pitney Road.....	A. B. Lea, County Surveyor.
Indiana.....	Summar.....	October 14, 6 P.M.	Laying cement sidewalks.....	E. R. Behlmer, Town Clerk.
Hawaii.....	Honolulu.....	October 15, noon	Furnishing 14,000 bbls. Portland cement; 16,500 tons broken stone and 7,000 tons sand.....	Geo. W. Cann, Co. Auditor.
Arkansas.....	Ft. Logan H. Root	October 17.....	Constructing 2-pipe concrete road culvert.....	Runyan & Carey, Newark, Eng'rs.
Indiana.....	Logansport.....	October 21.....	Constructing Rice road of gravel, between Cass and Carroll Co's.	Jas. Johnstone, Village Clerk.
Water Supply				
New York.....	Rome.....	September 25, noon	Bldg. dam at Fish Creek and tunnel 5,500 ft. long.....	Knight & Hopkins, Engineers.
Illinois.....	Summit.....	September 25, 8 P.M.	Drilling a deep well 1,600 ft. more or less.....	Jas. Johnstone, Village Clerk.
New Jersey.....	Highlands.....	Sept'ber 25, 8:30 P.M.	Bldg. municipal water works, inc. power house, stand pipe, pipe line, compound duplex steam pumps, air compressor, wells and receiving tank and steam boiler and piping.....	Runyan & Carey, Newark, Eng'rs.
Florida.....	Fort Barrancas..	September 26, 11 A.M.	Building 200,000-gal. rein. concrete reservoir, installing steam pump and air compressor and extending water main.....	Lt. A. L. Rhoades, Q. M., U. S. A.
Wisconsin.....	Madison.....	September 27.....	Constructing 1,000,000-gal. concrete storage basin; also for drilling one or two artesian wells.....	John B. Heim, Supt. Water.
Vermont.....	Ft. Ethan Allen.....	Sept. 28, 11 A.M.	Piping wells for air lift.....	Lt. M. G. Holliday, Q. M.
Virginia.....	Manassas.....	September 28.....	Constructing waterworks, electric lighting plant, etc.	Pressey & Weller, Washington, D. C.
Delaware.....	Wilmington.....	Sept. 30, 1:30 P.M.	Constructing covered slow sand filters of 6 beds and 10,000,000-gal. covered filtered reservoir, etc.	Theo. A. Leisen, Chief Engineer.
California.....	Los Angeles.....	Sept'ber 30, 3:30 P.M.	Furnishing f.o.b. cars Los Angeles, about 6,000 tons standard hub and spigot cast-iron water pipe; also 2 water tube 300-h.p. boilers and 7,000,000-gal. cross-compound engine.....	Wm. Mulholland, Supt. Water Bd.

Water Supply—Continued.

Minnesota	Detroit	Sept. 30	Erecting 50-ft. steel tower and 100,000-gal. tank; also laying 600 to 1,000 ft. water main, etc.	Chas. G. Sturtevant, Clk. W. and Light Com.
Minnesota	Mahnomen	Sept. 30	Bldg. water tank, tower, and complete water system for fire protection.	A. O. Vachan, City Recorder.
Nebraska	Beaver City	September 30	Furn. and laying 10,840 ft. 4-in. c. i. water mains.	W. L. Leonard, City Clerk.
Nebraska	Fremont	Sept. 30	Constructing machinery foundations and erecting chimney at city water and light plant.	E. N. Morse, Chm. Bd. Pub. Wks.
New Jersey	Harrison	October 1	Furnishing material and laying main in Franklin Ave.	B. P. Walsh, Town Clerk, Newark P. O.
Kansas	Garnett	October 1	Valves, pipe and connections for water plant.	Burns & McDonnell, Kansas City, Mo.
Illinois	Kewanee	October 5, noon	Furnishing pumping machinery, including steel tower, walking beam, pump rods, power pump, engine, etc.	J. C. Bannister, Chm. Water Com.
Colorado	Canon City	October 7	Bldg. reservoir at Cottonwood Creek; also ext. pipe line to city.	C. L. Mitten, City Engineer.
North Carolina	Fort Caswell	October 9, 11 A.M.	Building pump-house, ice plant and cold storage.	L. Cravens, Quartermaster.
Delaware	Fort Du Pont	October 10, 11 A.M.	Remodeling water system; also building 150,000-gal. tank.	Capt. J. L. Knowlton, Q. M.
Iowa	Primghar	October 10, 8 P.M.	Constructing water works for city.	M. Tschirzi & Son, Dubuque, Engrs.
Ohio	Ashland	October 14	Furn. 350 tons c. i. pipe, digging trench and laying 8,500 ft. pipe; also erecting bldgs. at pumping station; bldg. foundations for new machinery; furn. 14,000 lbs. pig lead.	Board of Public Affairs.
Georgia	Atlanta	October 23, 4 P.M.	Furn. and erecting, complete, sectional washing pressure filter plant of 8 units, each 8 ft. diam. and 20 ft. long, 4,000,000 gals.	Park Woodward, Bd. Water Comrs.
India	Rangoon	October 31	Pumping plant, in duplicate, capable of raising 10,000 gals. per minute, 220 ft. for the municipality.	Ogilvy, Gillanders & Co., 67 Sun Court, Cornhill, London E.C., Eng.

Sewerage

New York	New York	Sept. 26, 11 A.M.	Eight contracts for sewer construction.	Louis F. Haffen, Pres. Boro. Bronx Commandant.
Illinois	North Chicago	September 27, noon	Laying sewers and drains at Naval Training Station.	T. F. Dye, Sec'y Bd. Trus.
Ohio	Delaware	September 27, 6 P.M.	Constructing sewage disposal plant, Girls' Industrial School.	F. E. Jones, County Auditor.
Iowa	Boone	September 27	Constructing Co. drain No. 6; also enforcement and clay tile.	E. J. H. Cooper, City Clerk.
Ohio	Paulding	September 28	Constructing sewer center W. Jackson Street.	W. F. Schuker, City Engineer.
Ohio	Lorain	Sept. 28	Constructing sewers in five avenues.	R. H. Thomson, City Engineer.
Washington	Seattle	Sept. 28	Constructing small sewer in North 58th St.	Joseph Bermel, Boro. Pres.
New York	New York	Sept. 30, 11 A.M.	Eight sewer contracts, Queens Boro., Long Island City.	T. W. Vance, Clk. Bd. Pub. Serv.
Ohio	Steubenville	September 30, noon	Constructing sewers in three streets.	J. J. Smith, City Engineer.
North Dakota	Grand Forks	Sept. 30, 4 P.M.	Constructing sewer in 3rd St., between Woodbine & 4th Ave.	L. L. Fairchild, City Auditor.
North Dakota	Drayton	Sept. 30, 5 P.M.	Constructing sewer system for city.	Fred Everback, City Clerk.
Indiana	Seymour	Sept. 30, 8 P.M.	Constructing four sewers.	T. R. Wariner, City Engineer.
Iowa	Cedar Rapids	September 30	Constructing 2,550 ft. 7-ft. 3-ring brick sewer, 21st & 12th Aves. West.	Jay J. Morrow, Eng'r-Com'r.
Dis't of Col'bria	Washington	September 30	Constructing sewer in valley of Soapstone Branch.	Town Clerk.
California	Fairfield	September 30	Constructing sewerage system to cost \$20,000.	Chas. McLouth, Pres. Bd. Mgrs.
New York	Newark	October 1, 10 A.M.	Constructing sewage disposal plant, Custodial Asylum.	W. W. Wise, Bd. Pub. Works.
Iowa	Des Moines	October 1, 11 A.M.	Constructing 10-in. vit. pipe sewer in Tuttle St.	Geo. Johnston, Clk. Bd. Pub. Wks.
Michigan	Cadillac	October 1, noon	Constructing sewage purification works and pumping plant.	L. A. Washington, City Engineer.
Kentucky	Paducah	October 1, 3 P.M.	Bldg. 14 miles 6-in. vit. pipe laterals in 6 to 12-ft. trench.	J. D. Matheson, City Clerk.
Montana	Billings	October 1, 8 P.M.	Laying 3,000 ft. sewer, 12 manholes, 15 catch basins, paving, etc.	W. H. McMillin, Clk. Bd. Pub. Serv.
Ohio	Youngstown	October 1	Furn. material and laying sewer, portion Garfield St.	William J. Elliott, City Clerk.
New York	Cohoes	October 1	Constructing sewer.	
Massachusetts	Salem	October 2, 4 P.M.	Constructing 4 sections S. Salem trunk sewer with brick or rein. concrete, inc. 604 ft. 48-in., 814 ft. 42-in., 2,040 ft. 38-in., 1,720 ft. 36-in., 1,645 ft. 34-in., 2 inverted siphons.	Thos. G. Pinnock, Chm. Sewer Com'r.
Ohio	Leipsic	October 2	Constructing sewer, manholes, etc., in Poplar St.	Riggs and Sherman, Toledo.
Ohio	Mingo Junction	October 2	Constructing 2,400 ft. 8-in., 1,800 ft. 6-in. sewer, 9 manholes.	Frank McLister, Village Clerk.
Florida	Fort Dade	October 3, 8 P.M.	Repair and extension to sewer outlet.	Constructing Quartermaster.
Alabama	Jasper	October 3	Constructing \$15,000 sanitary sewerage system.	P. Byrne, Consulting Engineer.
Ohio	Columbus	October 4	Constructing East Side Sewage Pumping Station, and connections, inc. large quantity curb, concrete, steel, plumbing, etc.	E. F. McGuire, Sec'y Bd. Pub. Serv.
Arizona	Bisbee	October 5, 7:30 P.M.	Constructing a sewer system for city.	Olmstead & Gillelan, Los Angeles, Cal.
Iowa	Muscatine	October 8	Furn. and placing c. i. pipe at Cross Leaves, Section 5.	A. S. Lawrence, County Auditor.
Delaware	Fort Du Pont	October 10, 11 A.M.	Remodeling sewer and water systems, etc.	Capt. J. L. Knowlton, Q. M.
Washington	Seattle	October 12	Constructing Green Lake section, \$750,000, of north trunk sewer; total cost, \$2,325,000, inc. 2 miles of tunneling.	R. H. Thomson, City Engineer.
Missouri	Carthage	October 14	Constructing 3,258 ft. 8-in., 410 ft. 10-in. sewers, manholes, etc.	Wm. Kohlman, City Engineer.
Ohio	Steubenville	October 14	Constructing sewer in Clinton Street.	T. W. Vance, Clk. Bd. Pub. Service.
Ohio	Chagrin Falls	October 14	Constructing sewage purification plant, sand filters, etc.	W. P. Rice Eng. Co., Cleveland.

Public Buildings

Virginia	Nat. S'drs' Home	Sept'ber 26, 1:30 P.M.	Bldg. 3 barracks, mess hall and addition to hospital.	B. A. Benson, Treasurer.
New York	New York	Sept. 26, 2 P.M.	Erecting addition to Metropolitan Museum of Art.	McKim, Mead & White, Architects.
California	Riverside	September 26, 2 P.M.	Erecting cottages, stable, mess hall, etc., all brick.	Harvard Hall, Supt. Ind. School.
Iowa	Muscatine	September 26, 2 P.M.	Furn. material and erecting, complete, fireproof Court House.	Jos. E. Mills, Detroit, Mich., Arch.
South Dakota	Brookings	September 26	Erecting law building at Vermillion, and ladies' dormitory at Brookings; each to cost \$40,000.	Irwin D. Aldrich, Sioux Falls.
Massachusetts	Sutton	Sept. 26	Erecting four-room school in Sutton Center.	Jas. W. Stockwell, Chm. Bldg. Com.
Kentucky	Louisville	Sept. 27, noon	New power plant and steam heating apparatus in City Hall Annex and old engine house and remodeling old apparatus.	R. G. McGrath, Sec'y Bd. Pub. Wks.
Pennsylvania	Pittsburg	September 27, 2 P.M.	Constructing \$800,000 stone building, Co. Soldiers' Memorial.	J. G. Chalfant, County Engineer.
Colorado	Hesperus	September 27	Erecting school, office, moving bldg., imp. water system, etc.	J. S. Spear, Supt. Ft. Lewis School.
Ohio	Hamilton	Sept. 27	Sub-contracts for erecting Post Office.	Connors Bros. Co., Lowell, Mass.
Pennsylvania	South Sharon	Sept. 28, 6 P.M.	Erecting a school building.	A. R. Maxwell, Sec'y Bd. Education.
New York	West Haverstraw	September 30, noon	Heating, plumbing, etc., open air pavilion, N. Y. State Hospital.	Rev. H. C. Potter, Pres. Bd. M'g's.
Alabama	Selma	September 30, 3 P.M.	Erecting, complete, U. S. Post Office.	James Knox Taylor, Wash., D. C.
New York	Brooklyn	Sept. 30	Furnishing material and erecting Coney Island Hospital.	Heimle & Huberty, Architects.
New York	New York	Sept. 30	Constructing public comfort station at Long Island City.	Jos. Bermel, Boro. Pres.
New York	New York	Sept. 30	Ventilating, heating apparatus, etc., school buildings.	C. B. J. Snyder, Supt. Sch. Bldgs.
North Dakota	Esmond	Sept. 30	Erecting a brick school.	Thori, Alban & Fisher, St. Paul, Minn., Architects.
Missouri	Jefferson Bar'cks	October 1, 11 A.M.	Furn. and installing 2 new boilers in General Mess Hall Bldg.	O. W. Bell, Q. M., U. S. A.
Wisconsin	Eau Claire	October 1, 3 P.M.	Erecting, complete, Federal Building.	James Knox Taylor, Wash., D. C.
Maine	Portland	October 1	Plumbing the County Building.	Geo. Burnham, Architect.
New Jersey	Newark	October 1	Installing new boiler, etc., also plumbing work, Essex Co. Prison.	Hurd & Sutton, Architects.
North Dakota	Le Moure	October 3, 10 A.M.	Plans and specifications for Court House, \$60,000 to \$100,000.	E. W. Field, County Auditor.
New Jersey	Bayonne	October 3, 8:30 P.M.	Constructing public school No. 9.	A. C. Longyear, N. Y. City, Arch.
Ohio	Mt. Healthy	October 5, noon	Erecting two school houses, Springfield Township.	Wm. Fischvogt, Clk. Bd. Education.
Louisiana	New Orleans	October 5	Hot water heating plant at Naval Station; cost, \$25,000.	Commandant.
Wisconsin	De Pere	October 5	Plans for 3-story and basement Court House and 2-story base-ment jail, fireproof, complete; cost, \$300,000.	Special Bldg. Com. County Board.
New York	Fort Slocum	October 7, 10:45 A.M.	Erecting, plumbing, etc., seven buildings, inc. hospital.	Constructing Quartermaster.
Maryland	Baltimore	October 7, 3 P.M.	Erecting and mechanical equipment, Federal Building.	James Knox Taylor, Wash., D. C.
Ohio	Massillon	October 7	Furn. and installing furnaces or mechanical stokers for 4 Heine boilers, 150 h.p. each, in batteries of two for hospital.	Dr. H. C. Eymann, Sec'y State Hosp.
Arizona	Whipple Bar'cks	October 12, 10 A.M.	Constructing a post hospital.	Capt. Chas. C. Walcutt, Jr.
California	San Diego	October 14, 7:30 P.M.	Erecting brick or rein. concrete school building, 16 rooms.	H. L. Gay, Architect.
Wisconsin	Green Bay	October 15, noon	Erecting Court House, County jail and Sheriff's residence of stone and brick; to cost \$300,000.	E. S. Hall, County Clerk.
Arkansas	Osceola	October 15, noon	Erecting \$25,000 school building.	L. M. Weathers Co., Memphis, Tenn., Architects.
Ohio	Youngstown	October 15	Erecting 4-story granite Court House, 237 x 136 ft. for Mahoning County; estimated cost, \$1,000,000.	Owsley & Boucherle, Architects.
Ohio	Springfield	October 16, 3 P.M.	Erecting, complete, U. S. Post Office.	James Knox Taylor, Wash., D. C.
Illinois	Peoria	October 17, 3 P.M.	Erecting extension and remodeling Federal Building.	James Knox Taylor, Wash., D. C.
Alabama	Montevallo	October 18	Plumbing, steam heating, etc., addition Girls' Industrial School.	Wm. Ernest Spink, Birmingham.

Public Buildings.—Continued

Wisconsin	Milwaukee	October 21, noon	Constructing auditorium bldg.; entire or 14 separate bids for masonry, concrete work, etc; entire cost, \$475,000	Ferry & Clas, Architects.
Iowa	Des Moines	October 21, 3 P.M.	Erecting, complete, Federal Building	James Knox Taylor, Wash., D.C.
Indiana	Terre Haute	October 30, noon	Constructing new County jail, Sheriff's residence and heating plant, including remodeling present jail	J. W. Denchie, County Auditor.
Indiana	Bloomfield	November 5, 2 P.M.	Erecting new jail cell house	J. W. Gaddis, Vincennes, Arch.
Texas	Houston	November 5	Plans and specifications for \$500,000 fireproof Court House	Geo. F. Horton, County Engineer.

Bridges

Missouri	Memphis	Sept. 26	Erecting 32-ft. span and 16-ft. trestle	C. C. Critz, Commissioner.
Colorado	Denver	Sept. 27, noon	Constructing 80-ft. steel bridge and approaches	T. W. Jaycox, State Eng'r.
Colorado	Iola	Sept. 27	Constructing 200-ft. steel bridge over Gunnison River	T. W. Jaycox, Denver, State Engr.
Illinois	Chicago	Sept. 28, 11 A.M.	Furn. and erecting temporary bridge near S. Ashland Ave., over branch	John J. Harberg, Com'r Pub. Wks.
Ohio	Gloucester	Sept. 28, noon	Erecting bridge, inc. 207 yds. masonry, 30 concrete, 70 riprap	Athens Co. Commissioners. Athens, M. E. Townsend, Uriontown, Co. Commissioners.
Pennsylvania	Point Marion	Sept. 28, noon	Constructing 3-span steel bridge over Cheat River	John W. Harbow, Auditor.
Indiana	South Bend	Sept. 30, 11 A.M.	Erecting 5 culverts of concrete in 3 townships	M. G. Schaeffer, Co. Com'r.
Pennsylvania	Lancaster	Sept. 30, noon	Erecting stone twin-arch or rein. concrete bridge	Col. John Biddle, U. S. Engineers.
California	Oakland	September 30, noon	Painting government bridges over Oakland Harbor	Vessel, Duval & Co., N. Y. City
Chile, So. A.	Santiago	September 30	Erecting several bridges in Chile	County Commissioners.
Oklahoma	Guthrie	September 31	Erecting bridge, Cimarron River, Dist. No. 31, Lawrie twp.	Anton Filetti, City Clerk.
Illinois	Spring Valley	October 1, 4 P.M.	Bldg. ice breaker and protection pier, etc., Illinois River Bridge	J. S. Matson, County Surveyor
Ohio	Jefferson	October 2, 1 P.M.	Constructing rem. concrete bridge, Hartsgrove twp. Report No. 40.	G. H. Gard, City Clerk.
Minnesota	Fergus Falls	October 3, 8 P.M.	Erecting steel or concrete bridge over Red River	B. F. Carman, County Auditor.
Indiana	Crawfordsville	October 5, 10 A.M.	Erecting 2 concrete arch bridges in Madison and Repley Twps.	A. W. Beatty, County Auditor.
Ohio	St. Clairsville	October 7, 1 P.M.	Erecting 2 concrete bridges, steel superstructure, 30 x 14 ft., etc.	County Commissioners.
Ohio	Niles	October 7, 1 P.M.	Laying wood block on plank base, Main St. County bridge	J. G. Ellis, Co. Auditor.
Indiana	Salem	October 7, 1:30 P.M.	Constructing steel bridge and stone abutments	J. J. W. Oollen, County Auditor.
Indiana	Vevey	October 7, 2 P.M.	Erecting concrete or iron bridge, to replace 144 ft., 3-span bridge	W. G. Kirkpatrick, Jackson, Eng'r.
Mississippi	Vicksburg	October 7	Erecting a reinforced concrete bridge	J. C. Hotham, Chm. Co. Com'r.
Kansas	Atchison	October 7	Rebuilding bridge No. 230 Mt. Pleasant Township	Chr. Pabst, County Auditor.
Ohio	Hamilton	October 8, 10 A.M.	Erecting sub and superstructure bridge over Two Mile Creek	Fred H. Engel, County Auditor.
Indiana	Delphi	October 8, noon	Erecting bridge and abutments or arch culvert over creek	S. B. Rambo, Harrisburg, S. P. G. & B.
Pennsylvania	Jersey Shore	October 8, noon	Rebuilding sub and superstructure of bridge	J. D. Laughlin, Chancery Clerk.
Mississippi	Vicksburg	October 8, noon	Building steel bridge over Simrall's Canal	J. D. Laughlin, Chancery Clerk.
Mississippi	Vicksburg	October 9, noon	Repairs to Durden bridge	R. R. Price, County Engineer.
Florida	Palatka	October 9	Erecting \$60,000 bridge over St. John's River	William Dodds, County Auditor.
Ohio	Xenia	October 12, noon	Erecting low truss bridge, 90 ft. long, 14 ft. clear roadway	H. G. Parker, Bridge Engineer.
California	Los Angeles	October 14, 11 A.M.	Erecting reinforced concrete bridge over Los Angeles River at 7th St., 318 ft. long, 20 ft. wide, contain, 5,440 cu. yds. cement	Chas. M. Richey, Co. Surveyor.
Ohio	Bellefontaine	October 14, 1 P.M.	Erecting 67-ft. steel span on concrete abutments, 40-ft. r'dway	C. H. La Billois, Chm. Co. Com'r.
New Brunswick	Fredericton	October 14	Constructing metal span of Cocagne Mouth Bridge, Kent Co.	J. H. Putnam, Mun. Riverside.
Manitoba	Dunrea	October 15, noon	Constructing steel bridge, two 100-ft. spans, on concrete and boulder masonry foundation over Souris River	O. M. Johnson, County Clerk.
Kansas	Erie	October 15, noon	Erecting 3 steel or iron bridges, one to cost \$12,000; others, \$6,000 or \$7,000 each; also repair, etc., 2 bridges	Canton River Bridge Co. Ltd.
China	Canton	October 10	Constructing steel cantilever and girder bridge, 1,102 ft. long, in Front Reach, 740 ft. west of Dutch-folly Fort	

Lighting and Electricity

Virginia	Manassas	September 28	Constructing electric light plant, waterworks, etc.	O. E. Newman, Chm. Com.
New York	Rochester	September 30, 10 A.M.	Furn. and installing 150 h. p. 130-lb. pressure internal furnace boiler in Co. power house; also electric lighting plant in basement of Court House	G. L. Meade, Chm. Co. Com'rs.
New York	West Point	September 30, noon	Furn. and installing combination gas and electric light fixtures, etc., old and new Cadet barracks	Maj. J. M. Carson, Q. M., U. S. A.
Connecticut	New London	September 30, noon	Furnishing 40 25-k. w. generating sets, complete	Maj. Harry Taylor, Eng'r Corps.
New York	West Haverstraw	September 30, noon	Electric work, etc., open-air pavilion, N. Y. State Hospital	G. L. Heins, Albany, Architect.
Brit. Columbia	Revelstoke	September 30, 6 P.M.	Enlarging hydro-electric plant, inc. 500 h. p. producer gas plant and engines, generators and exciters, transmission machinery, switchboards, wiring and rearrangement of present plant	Cecil Goddard, Winnipeg, Cons. Engr.
Manitoba	Winnipeg	October 1, noon	Constructing general works and supply of equipment for hydro-electric station at Point du Bois	Chairman Board of Control.
Florida	Jacksonville	October 4, noon	Furnishing and setting up 1,500 k. w. steam turbo-generator, 50 k. w. motor driven exciter	R. N. Ellis, Supt. Light Plant.
Indiana	Crawfordsville	October 5	Constructing and equipping lighting plant at County Asylum	B. F. Carman, County Auditor.
New York	Fort Slocum	October 7, 10:45 A.M.	Electric wiring, plumbing, etc., seven new buildings	Constructing Quartermaster.
Dist. of Col'bria	Washington	October 14	Automatic fire alarm telegraph systems, marine electric fixtures, batteries, dynamite, etc., for Isthmian Canal Commission	H. F. Hodges, Gen. Pur. Officer.
Georgia	Savannah	October 15, noon	Lighting sts. by electric light and incandescent lamps; also for furn. electric current for lighting, heat and power	Harry Willink, Director.
Alabama	Montevallo	October 18	Electric wiring, plumbing, etc., addition Girls' Indus. School	Wm. E. Spink, Birmingham, Arch.
Indiana	Seymour	November 1	Furnishing gas for light and fuel and electricity for light and power	Fred Everback, City Clerk.
South Carolina	Charleston	November 15, noon	Lighting sts. and public bldgs., 1, 2 or 4 yrs., inc. 500 arc. lights or equivalent in 5 ft. gas burners	Ion Simons, City Electrician.
India	Calcutta	December 31	Lighting town by electricity, gas, oil, or other method; now lighted by 0,300 gas lamps of 24 c.p. and 2,400 c.p. oil lamps	Municipal Council.

Miscellaneous

New York	New York	September 26, 2 P.M.	Construction and electrical equipment of elevated tracks over Williamsburg bridge	J. W. Stevenson, Com'r Bridges.
New Jersey	Newark	September 26, 3 P.M.	Furnishing 10,000 ft. two-pipe iron fence for parks in Bronx	Park Department.
New York	Newark	Sept. 26, 3:30 P.M.	Removal garbage, etc., 5 yrs., from Jan. 1, 1908	M. R. Sherrerd, City Engineer.
California	San Francisco	September 27, 11 A.M.	Bldg. extnsion to pier bet. 51st and 52nd Sts., Brooklyn	J. A. Bensel, Com'r of Docks.
Massachusetts	Boston	September 30	Constructing tornado wharf at Fort Winfield Scott	Capt. B. F. Cheatham, Q. M.
Indiana	Jeffersonville	October 1, 10 A.M.	Dredging in Mystic River	Maj. Edw. Burr, Eng'r Corps.
Pennsylvania	Wilkes-Barre	October 2, 2 P.M.	Furnishing 5,000 ft. 4-inch rubber hose	J. M. Marshall, Asst. Q. M. Gen.
New Jersey	Cold Spring	October 3	Erecting retaining and courtyard walls, new Co. Court House	McCormick & French, Architect.
Ohio	Toledo	October 7, 10 A.M.	Constructing stone jetties, Cold Spring Inlet	Maj. C. A. F. Flagler, Wilm'tn, Del.
Louisiana	New Orleans	October 7, 10 A.M.	Constructing riprap stone wall along east side of fill crossing Mud Creek, north of Casino, Washington township	L. B. Bailey, Chm. Co. Comrs.
Ohio	Toledo	October 7, 10 A.M.	Erecting 75-ft. iron flagstaff at Fort Jackson	Capt. Arthur Cranston, Q. M.
California	Los Angeles	October 7	Constructing riprap stone wall	County Auditor.
New Jersey	Ashbury Park	October 8	Cement-making machinery for Aqueduct, Specification No. 6	W. R. Ormsby, Act. Pur. Agent.
Alabama	Riverton	October 12, 11 A.M.	Building jetties to protect and build up beach	W. P. Sherman, Sec'y Pub. Gr. Com.
Dist. of Col'bria	Washington	October 10	Excavation, riprap and paving at Colbert Shoals Canal	Maj. Wm. W. Harts, Eng'r Corps.
			Furnishing 12,000 trunk lockers	Maj. M. Gray Zalanski, Q. M.

STREET IMPROVEMENTS

Montgomery, Ala.—Bids are invited for paving, with the best material, sidewalks on both sides of S. McDonough street, from Winnie street to Felder avenue.—W. M. Teague, Mayor.

Selma, Ala.—Council has passed ordinances preparatory to paving Broad street with asphalt, with brick curb, and Water street with vitrified brick. Bids will be advertised for.—Julian Kendrick, Birmingham, Engineer.

San José, Cal.—For the third time, no bid has been offered to improve North Ninth street, from Washington to Empire.

Bridgeport, Conn.—City Surveyor William W. Starr has finished plans and specifications for the improvement of the roadway of Fairfield avenue, from the railroad bridge in the West End to the new Ash Creek bridge.

Hartford, Conn.—The Board of Aldermen has passed resolutions for new curb radii at Blue Hills and Albany avenues; for sidewalk on south side of Frankfort street; and

for new street lines at the southwest corner of New Britain avenue and Webster street.

Wilmington, Del.—Tenth street, from Orange to Tatnall streets, is to be widened, at a cost of \$30,000.—Theo. A. Leisen, Chief Engineer.

Cairo, Ill.—The estimated cost of proposed brick pavement and sewer on Sycamore street is \$41,007.82; paving Poplar street, \$60,889.90.

Rock Island, Ill.—The Board of Local Improvements has decided to pave certain portions of Forty-second and Twenty-fifth streets.

New Orleans, La.—It is estimated that the proposed sidewalk construction would cost nearly half a million dollars.—Wm. J. Hardee, City Engineer.

Takoma Park, Md.—Town Council has appropriated \$1,500 for resurfacing Carroll avenue, from the District line to Ethan Allen avenue; bids will be advertised for furnishing crushed stone and for hauling and spreading same; the Street Committee has been directed to repair the sidewalks on Oak and Holley avenues, and construct a cement walk on Elm avenue.—W. G. Platt, Mayor.

Cambridge, Mass.—Council has ordered the construction of a sidewalk around the triangle bounded by Franklin street, Pleasant street and Western avenue.

Detroit, Mich.—The Board of Public Works has directed the construction of brick, natural stone, artificial stone, cement or concrete sidewalks on a large number of streets.—J. J. Haarer, Commissioner.

Grand Rapids, Mich.—The improvement of Logan street from South Fuller to Rural street will cost \$12,860, and the grading and paving with concrete of Cherry alley will cost \$6,011.—Samuel A. Freshney, Secretary, Board of Public Works.

Winona, Minn.—An ordinance has been passed for paving certain streets with brick on a concrete foundation.

Natchez, Miss.—The estimated cost of the street work being done is \$100,000.

Carthage, Mo.—Council has ordered sidewalks on Maple street, from Chestnut to Macon streets; Orchard street will be graded and graveled, and curb and gutters will be placed on both sides of Main street.

Hoboken, N. J.—August Thiel was the only bidder for the reimprovement of Hamblet place.

Corning, N. Y.—It is contemplated to pave Mill street to State street, a distance of a mile, with brick, except between Wall and Pearl, which is of macadam.

Union, N. J.—Council has passed ordinance to reimprove Bullsberry road, from Hackensack turnpike to northerly limit of road, by paving with trap rock specification blocks, tar and gravel joints, to Blum street, and with sand joints from Blum street to city line, subgrading laying Cow Bay sand, resiling and redressing curb, etc.—Emil Bautz, Jr., Town Clerk.

New York, N. Y.—Louis F. Haffen, President of the Borough of the Bronx, has advertised for bids for contracts, which, when awarded, will place the city under obligations of more than a million dollars additional; there will be twenty-seven contracts for grading, curbing, paving and asphaltating in the Bronx, for as many streets and avenues; the bids will be opened on Thursday, September 26.

Charleston, N. C.—An election will be held to decide the question of issuing \$40,000 County road bonds.—Address County Auditor.

Elizabeth City, N. C.—The Board of Public Improvements will readvertise for bids for the purchase of \$125,000 street improvement bonds.—Address City Clerk.

Dayton, O.—The City Clerk has been instructed to advertise for bids for the unfinished curb and gutter on the north side of Kiefer street, from the C., H. & D. Railroad to the alley west of Daller street.

Fostoria, O.—A number of sidewalks are to be authorized on the Public Square.

Glen Dale, O.—J. G. Cutting, Clerk of this village, will open bids October 5 for the purchase of \$800 worth of bonds, proceeds from which are to be applied to the construction of sidewalks, of both artificial stone or cement.

Greenwich, O.—Bids will be opened, October 14, for \$4,700 5 per cent. bonds for street improvements.—J. G. White, Village Clerk.

Norwood, O.—Bids will be opened, October 10, for \$15,000 4 per cent. 20-year bonds for street improvements; also for \$34,000 bonds.—W. E. Wichgar, Village Clerk.

York, Pa.—C. E. Brenner, member of the Council, states that steps are being taken for a large amount of paving and other municipal improvements; several blocks will be paved, and plans for other improvements will be taken up in the spring.

Knoxville, Tenn.—Bids will be asked for paving recently created improvement district.—Capt. W. C. Crozier, City Engineer.

Salt Lake City, Utah.—Council is preparing to pave Main street.—Address City Clerk.

Burlington, Vt.—The Board of Aldermen has appropriated \$1,200 for grading Depot street and constructing a suitable trestle to bridge the ravine; the changing of grade curbing and guttering on South Winooski avenue has also been authorized.

Eau Claire, Wis.—An ordinance has been passed for the construction of macadam pavement, cement curb and brick gutters on Galloway street, and cement curb on Putnam street.

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SEWERAGE

Bessemer, Ala.—Bonds, \$25,000, have been voted for sewer purposes.

Hartford, Conn.—The Board of Aldermen has passed resolutions for extension of Allen place sewer; for a sewer in Lincoln street extension; and for a sewer in New Britain avenue, from the tuberculosis hospital driveway and Clermont street easterly.

Rome, Ga.—The estimated cost of the proposed sewer is \$25,000.—J. N. Hazlehurst, Atlanta, Consulting Engineer.

Silvis, Ill.—The matter of issuing bonds for fire protection and sewer purposes is under consideration.—Address City Clerk.

Lexington, Ky.—An 8-mile sanitary sewer, according to the Waring plan, is to be constructed in Clay avenue, from Central avenue north to a point near East Main street, with the necessary manholes, flush tanks, etc.—Thos. A. Combs, Mayor.

At the November election the matter of issuing \$75,000 sewer bonds will be submitted to a vote of the people.

New Bedford, Mass.—The estimated cost to construct sewer on Nash road is \$1,500.

Grand Rapids, Mich.—The construction of a sewer in Innes avenue from Grand avenue to North East street will cost \$1,170, and in East Bridge street, from Kent to Ionia street, to cost \$5,370.—Samuel A. Freshney, Secretary, Board of Public Works.

St. Paul, Minn.—The Assembly has unanimously passed final order for a sewer on St. Anthony avenue.

Carthage, Mo.—Council has passed an ordinance providing for building a sewer for the northeast part of town.

Plainfield, N. J.—Bids will be received, October 8, for the purchase of \$68,000 4½ per cent sewer bonds.—Address City Treasurer.

Seneca Falls, N. Y.—Bids will be asked for the construction of a sewage disposal plant, to cost \$10,000 or \$15,000.

Humboldt, Neb.—Bonds, \$7,000, have been voted for sewer supply.

Canton, O.—The important question of furnishing sanitary sewerage facilities for the various large plants in the neighborhood of the Barger Manufacturing plant is about to be taken up by Council.

Chagrin Falls, O.—Bids will be opened, October 12, for \$58,000 bonds for sewage disposal plant.—H. D. Bishop, Village Clerk.

Dayton, O.—The City Clerk has been instructed to advertise for bids for the construction of a sanitary sewer in the first alley west of Cincinnati street, from Fluhart to Albany street.

Lockland, O.—A special meeting of the Council of Hartwell has been held, at which general plans were discussed for a sewer system which is to be built in the village; the Chairman of the Improvement Committee has received a communication from Engineer John W. Hill, making a number of general recommendations.

Oberlin, O.—Bids will be opened, October 12, for \$10,000 4½ per cent. semi-annual bonds for constructing sewer beds.—C. H. Snyder, City Clerk.

Ravenna, O.—Contractor E. McSchafer has been served with notice to abandon the sewage disposal plant; bids will be readvertised for the construction for the remainder of the beds and for further improvements.

Carlisle, Pa.—The State Health Department has approved the double contract system of sewerage, which will include the districts bounded by North, South, East and College streets, to cost \$111,359.98; the Sprinkler system, plans for which were approved, would cost \$10,000 less; to accommodate the present population of the entire borough the sewerage system will cost \$148,673.71.—T. Chalkley Hatton, Wilmington, Del., Consulting Engineer.

York, Pa.—The Municipal League has decided that in case no responsible bidder shall be willing to make a contract with the city for completing the sewer system and disposal plant for \$400,000, that the League will oppose any effort to make the expenditure greater than this amount.—Geo. S. Schmidt, a member of the League, presented the resolution.

Chattanooga, Tenn.—City Engineer Hooke has been directed to prepare estimates for three lateral sewers.

Tacoma, Wash.—No bids have been submitted to the Board of Public Works for the Green Lake section of the north trunk sewer system; the estimated cost for entire system is \$2,325,000, and the Green Lake section, \$750,000; the work includes two miles of tunneling; the bids will be re-advertised for October 12.

Eau Claire, Wis.—An ordinance has been passed for the construction of a sewer on Putnam street.

WATER SUPPLY

Gadsden, Ala.—The estimated cost of water works improvements is \$100,000.

Wilmington, Del.—Estimates have been prepared and bids will be asked for construction of filtration plant.—Theo. A. Leisen, Chief Engineer, Department of Water Works.

Rome, Ga.—The estimated cost of the proposed water extensions is \$50,000.—J. N. Hazlehurst, Atlanta, Consulting Engineer.

Joliet, Ill.—Council is devising ways and means to secure a water system.—H. A. Stevens, City Engineer.

Concordia, Kan.—Burns & McDonnell, Kansas City, Mo., have been directed to prepare plans for remodeling water system.

Louisville, Ky.—The Allis-Chalmers Company has been awarded contract for a 24,000,000-gallon daily capacity pumping engine; cost, \$250,000; there were five other competitors.

Midland, Mich.—The citizens have voted \$30,000 bonds to secure water plant.

Milan, Mich.—The citizens have voted \$30,000 bonds for water works purposes.—Address Clerk of the Board.

Aurora, Mo.—The City is considering the purchase of the water works plant upon the expiration of the franchise of the present owners.

Hoboken, N. J.—The city will issue \$95,000 4½ per cent. bonds for laying new and additional water mains.—George H. Steil, Mayor.

Ithaca, N. Y.—The Ithaca Water Board has sold \$87,000 worth of city water bonds to local parties, at the rate of 4½ per cent.; the bonds were issued to pay for the Ithaca Water Company, which was condemned, and for which the city is to pay \$660,000.

Rochester, N. Y.—Bids will be advertised for replacing the present Holleywater mains with larger ones between State street and the canal; the fire protection has been deemed inadequate because of the small supply pipes.—Beekman C. Little, Superintendent of Water Works; Edwin A. Fisher, City Engineer.

Minot, N. D.—Plans are being prepared for water system; the plans include new pumping station, complete new set of mains, etc.

Swanton, O.—An ordinance has been passed to purchase a site for the new water works.—Dr. A. B. Lathrop, Emery Hatfield and James Trenton, Trustees.

Mt. Pleasant, S. C.—Council has called an election to vote on the question of issuing \$10,000 bonds for the erection of a stand-pipe.—Address City Clerk.

Chattanooga, Tenn.—Council will issue bonds with which to buy or build water works; the City Water Company will sell its plant.

Dickinson, Tenn.—The proposition to issue \$25,000 5 per cent. water works bonds carried.—Address City Clerk.

Sweetwater, Tenn.—The citizens have voted \$30,000 bonds for water system; \$10,000 in bonds have been voted for street improvements.—Address City Clerk.

Brownsville, Tex.—The proposition to issue \$70,000 water bonds carried.

Crockett, Tex.—The matter of issuing \$25,000 water bonds will be submitted to a vote of the people.

Fairland, Tex.—An election will be held to decide the question of issuing bonds for water works purposes.

Murray, Utah.—The Progress Company of Murray has filed a petition with the State Engineer for sixty feet of water to be diverted from the big Cottonwood; it will be used to operate a turbine for the generation of 350 horsepower for the Murray electrical system.

LIGHTING AND ELECTRICITY

Hartford, Conn.—The Board of Aldermen has passed resolutions for the following electric light changes: For two series lights in Oriental alley in place of one arc light, and for an arc light on Ann street between Church and Chapel; for four series lights on Bushnell street between Franklin avenue and Campfield avenue in place of an arc light; for three series lights in Ward place in place of one arc light; for relocation of lights on Windsor avenue and neighborhood.

Americus, Ga.—The electric light plant now owned by the Americus Illuminating and Power Company will be turned over to the new company, which is ready to build a new plant, and at the same time put into operation one of the most complete and up-to-date street railways in the State; work will begin at once on the new plant and street railway.

Colgate, I. T.—The Colgate, Lehigh and Phillips Electric Light and Power plant was totally destroyed by fire; the plant is located at Phillips, two miles south of here, and midway between this place and Lehigh, the three towns being served by the plant.

Greenville, Ky.—The Greenville Light and Water Company has been organized with a capital of \$35,000, to furnish light and water.—J. A. Gilman, Engineer.

Grand Rapids, Mich.—There are 250 arc lamps suspended on short mast arms, which it is proposed to change to center of street, at approximate cost of \$3,000.—Samuel A. Freshney, Secretary, Board of Public Works.

St. Paul, Minn.—The Assembly has appropriated \$1,000 for an expert report on the local gas problem.

Vineland, Minn.—Mille Lace Power, Light and Heating Company is the name of the newly organized company that will establish a power, light and heating plant at Wahkon as soon as trains are running on the new Soo line; after the plant is erected and in running order the light and power will be transmitted to Isle Harbor and Cove, and it will be but a short time before the entire shore line of Mille Lace from Vineland to Opstead will be lighted up by electricity.

Yonkers, N. Y.—The Board of Aldermen has authorized the Committee on Public Lighting to cause gas mains to be laid and Weisbach lamps to be installed in Pelham street.

Delta, O.—C. S. Longnecker, of the Delta Electric Lighting Company, has asked Council for a franchise for a water works plant.

Elyria, O.—Councilman Mueller has recommended that the question of a bond issue for a municipal lighting plant be submitted to the voters at the November election.

Lima, O.—The question of constructing a \$30,000 municipal electric lighting plant is to be taken up by Council.

Toledo, Ohio.—The question of franchise of the People's Light and Power Company for conduits in streets for heating purposes will be submitted to the people.

Westville, O.—Council has decided to issue \$3,000 additional electric light bonds.—Address City Clerk.

Bristol, Tenn.—Both municipalities of Bristol have granted a franchise to a new electric distributing company as a means of putting into effect the proposition of New York capitalists to spend \$500,000 in developing the Holston river water power in order to supply Bristol with electricity for lighting and manufacturing purposes.

Alvin, Tex.—Council recently passed a resolution authorizing the Mayor to purchase 4,000 1,000-candlepower street lamps for lighting the business section of the city.

FIRE EQUIPMENT

Bridgeport, Conn.—The Fire Commissioners have ordered an auto chemical apparatus and a 50-gallon chemical tank, with reel and hose; cost, \$5,250.

Jacksonville, Fla.—Council has authorized the extension of mains to Old Town, in order to increase fire protection.

Coleraine, Minn.—Council is preparing to establish Fire Department; apparatus will be purchased.—W. K. Stock, Chairman.

South Orange, N. J.—Arrangements are being made to purchase modern fire apparatus in South Orange township.

Utica, N. Y.—The matter is under consideration to establish co-operative fire system in several streets and villages touched by the Utica and Mohawk Valley Railway.

Grand Forks, N. D.—Council has accepted plans for building engine house on South Fourth street.—W. W. O'Connor, City Auditor.

Akron, O.—The Board of Public Service is preparing to improve fire protection of the village.

Chattanooga, Tenn.—Bids will be asked for by City Engineer Hooke for a new wood or brick floor for fire hall No. 2, and for a concrete floor on steel girders, or the filling in of the basement of fire hall No. 3.

Dallas, Tex.—Additional fire apparatus is to be purchased.

PUBLIC BUILDINGS

Osceola, Ark.—Bids will be received by L. A. Morris, Secretary of the Special School District, for \$25,000 6 per cent. 20-year school bonds, until October 15, noon; also at the same time for erecting school building.—L. M. Weathers Company, Memphis, Tenn., Architects.

Washington, D. C.—Plans for a station house to be built in Anacostia, at a cost of \$40,000, are in the hands of Mayor Richard Sylvester, Superintendent of Police.

New Albany, Ind.—The Floyd County Board proposes to build jail; bonds are to be issued for the purpose.

Paris, Ky.—Bonds, \$45,000, will be voted on November 5, for erecting school building.—James M. O'Brien, Mayor.

New Orleans, La.—Council has rejected the bid of the Congress Construction Company to build City Hall annex, and will readvertise for bids.—Martin Behrman, Mayor.

Hoboken, N. J.—Bonds, \$7,454, will be issued for the erection of an extension and

enlargement to Public School No. 2.—George H. Steil, Mayor.

Rochester, N. Y.—Bids will be readvertised for remodeling the old armory into a convention hall in conformity with the newer plans prepared by Architect J. F. Warner.—Frederick T. Elwood, President, Board of Public Works.

Yonkers, N. Y.—The Aldermen have voted to issue \$70,000 school bonds.

Youngstown, O.—Bids will be opened, October 10, for \$96,000 4½ per cent. semi-annual bonds for erecting County Court House.—W. B. Jones, Auditor, Mahoning County.

Tecumseh, Okla.—The citizens have voted \$45,000 in bonds for the erection of the county high school.

Brunswick, Pa.—Bids will be received, October 1, for the purchase of \$75,000 jail bonds.—C. Miller, Chairman of the Board.

Kane, Pa.—Bids will be received, October 1, for the purchase of \$20,000 4½ per cent. school bonds.—Robert D. Shaner, Treasurer.

Stamford, S. D.—The citizens have voted bonds for the construction of a school house.—Address Clerk of the Board.

Chattanooga, Tenn.—Bids will be advertised for the stone excavations for City Hall foundation.

Claude, Tex.—Bonds, \$15,000, have been authorized for school purposes.—Address Clerk of the Board.

Nixon, Tex.—The citizens have voted \$10,000 bonds for school purposes.—Address City Clerk.

Pflugerville, Tex.—The citizens have voted \$5,000 bonds for school purposes.

Price, Utah.—The County Commissioners will soon build a new County Court House.—H. C. Smith, Clerk, Carbon County.

Anderson, W. Va.—Bids will be received, October 4, for the purchase of \$15,000 5 per cent. school bonds.

STREET RAILWAYS

Sacramento, Cal.—The Board of Trustees has unanimously voted to pass the so-called X-street franchise of the Northern Electric Company.

Santiago, Chile.—The Chilean Government authorizes the General Director of the State Railways to expend nearly \$2,000,000 upon different works, such as electric light installation, railway construction, and the purchase of machinery. Address General Director of State Railways, Santiago, Chile.—Address No. 1410, Bureau of Manufactures, Washington, D. C.

Memphis, Tenn.—Application for a franchise has been made to the city by the Memphis Light and Traction Company, which proposes to build a line in New South Memphis and adjacent territory.

East Alton, Ill.—Application for a franchise for a street railway through the town has been made by W. Rudsell, of Bunker Hill, Ill.; it is proposed to run the line to Alton, a distance of about 20 miles.

Quincy, Ill.—An ordinance has been adopted granting a 50-year franchise to the St. Louis, Terre Haute and Quincy Traction Company.

Albia, Ia.—Citizens are considering a proposed extension to Hiteman, Ia., of the interurban lines entering the city from the south; estimated cost of line, \$60,000.

Blaine, Mont.—Surveys for a proposed electric railway from Blaine Springs to the Eastern and Pacific mine have been completed by George R. Welden, of Dillon, which, if built in a direct line, will be 11 miles long; if built by way of Virginia City the distance will be 12 miles.

New Westminster, B. C.—It is stated by James Milne, General Superintendent of the British Columbia Electric Railway Company, Ltd., Vancouver, B. C., that electricity will be the motive power to be used in the New Westminster-Chilliwack line.

BRIDGES

Birmingham, Ala.—Plans are being completed for the first grade crossing viaduct, which will be constructed under the O'Neill resolution in the Council.

Rock Island, Ill.—A petition for three new bridges in Zuma township was received by the County Board and considered; the petition was referred to the Road and Bridges Committee for report.

Crawfordsville, Ind.—Proposals will be received for concrete arch in Madison township, known as Peterson arch; also for concrete arch in Ripley township, known as Hibernian arch, and for acetylene light plant at the county asylum.—Benjamin F. Carman.

Frankfort, Ind.—Council has made an appropriation for building cement arches at Clinton and Walnut streets.

Lafayette, Ind.—The County Council of Tippecanoe County has appropriated \$50,000 to build a bridge across the Wabash river at Granville, seven miles southwest of Lafayette.

South Bend, Ind.—The estimated cost of proposed permanent bridge over the east

race on East La Salle avenue is: First, for a single span Melon arch bridge similar to the Colfax avenue race bridge, but having a width of 80 feet, \$19,000; second, for a reinforced concrete beam bridge of three spans, having two piers in the race, \$12,775.—A. J. Hammond, City Engineer.

Erie, Kan.—The County Commissioners have directed the County Clerk to advertise for bids on three large bridges, and the work of construction will be begun as soon as the arrangements can be completed; one will be built across the river one mile east of Chanute; this is the most expensive, and will cost in the neighborhood of \$12,000; the two others will cost between \$6,000 and \$7,000 each; one will be located two and a half miles west of Erie, and the other one mile south of St. Paul; the bids must cover not only the construction of these three new bridges, but also the repair of a bridge across Flat Rock creek, five miles east of Kimball, and one seven miles southeast of Thayer.

Boston, Mass.—Bids have been received for building concrete-steel beam bridge in towns of Groton and Peperell, from Fred E. Ellis, \$16,899; J. F. Gill Company, \$14,940; Arthur J. Cavanagh, \$8,100; all bids rejected.

Ishpeming, Mich.—Ishpeming township is to have a new steel bridge erected across the west branch of the Escanaba river, on the road to Camp Nine and Camp Clark, at a cost of \$750, to replace the structure rendered useless by the floods last spring; the bridge will be erected this fall, and the County will contribute \$250 toward the expense; the County Supervisors also decided to appropriate \$100 toward the expense of constructing a steel culvert over the Michigamme river.

Colville, Minn.—Bids will be received, October 1, for the purchase of \$5,000 5 per cent 15-year bridge bonds.—L. R. Daniels, Town Clerk, Post Office, Grand Marais.

Cleveland, O.—The Board of Public Service has been requested to cause all bridges, viaducts and other structures crossing over any public highway to be painted with white or other light colored paint, and to maintain them in condition.—A. R. Callow, Secretary.

Pittsburg, Pa.—Council has authorized the Director of the Department of Public Works to prepare estimates of cost for the construction of a bridge between the Thirteenth and Sixteenth wards, across the Junction Hollow.

Wharton, Tex.—The County Commissioners have passed an order to join with Fort Bend county in building a bridge across the Bernhard river about fourteen miles below Wharton; Fort Bend county was represented by J. R. Farmer, one of the Commissioners, and a committee from Fort Bend, to select the site for the proposed bridge.

Milwaukee, Wis.—Alderman Corcoran will ask Council to lay the proposition of several new bridges for the Milwaukee river before the voters at the spring election; he has directed the City Clerk to prepare a resolution declaring it to be the intention of the Council to erect bascule bridges at Buffalo, Michigan and Oneida streets, and providing that the question of issuing \$650,000 bonds for this purpose be placed before the people at the April election.

MISCELLANEOUS

Bessemer, Ala.—Citizens have voted for the issuance of \$50,000 worth of bonds for building a new school; \$35,000 for paying for storm sewers; \$7,500 for improving the Fire Department; \$22,000 improvement bonds.

Ashdown, Ark.—T. C. Ambrey, of Verda, La., is interested in the organization of a company here to install a light and ice plant; the plant will be ready for use in March.

San José, Cal.—Council has decided to prohibit the use of a city wagon to water the private streets of Chinatown, and that section will have to make its own arrangements for street sprinkling.

Blue Ridge (P. O. Munsie), Ga.—The citizens have voted to issue \$30,000 bonds for water and light purposes.

Rome, Ga.—Plans have been prepared by J. N. Hazlehurst, Consulting Engineer of Atlanta, for \$225,000 worth of paving, and \$150,000 bonds have been voted, of which \$75,000 is for paving; \$50,000 for water works; and \$25,000 for sewers; bonds have not yet been issued, and may not be before next year.—J. R. Cantwell, City Clerk.

Baltimore, Md.—The question of the new \$1,000,000 park loan will probably be submitted to the voters.—J. Barry Mahool, Mayor.

Berrien Springs, Mich.—The proposition to issue \$17,000 light and water bonds carried.

Yonkers, N. Y.—The Board of Aldermen has authorized the Committee on Parks to investigate property in the new Seventh Ward, with a view to acquiring about thirty acres.

Greenwich, O.—Bids will be received, October 14, for the purchase of \$8,000 sewer bonds and \$4,700 paving bonds.—J. F. White, Clerk of the Village.

Hamilton, O.—Bids will be received, October 12, for the purchase of \$20,000 sewer bonds, \$20,000 electric light bonds, \$12,000 sewer bonds.—Thad Straub, Auditor.

Portland, Ore.—Municipal bonds to the amount of \$4,775,000 have been ordered issued by Council in accordance with the authority given that body at the general election in June; the issues affected are as follows: \$3,000,000 for the laying of a new pipe line to Bull Run and the installation of meters; \$1,000,000 to provide a system of parks and boulevards; \$500,000 bonds for a system of public docks; \$275,000 for the purchase of a new fire boat and the laying of fire mains; these bonds were all ordered issued by the ordinances introduced by Kellher and passed by unanimous vote; the ordinances have the effect of placing the matter in the hands of the Ways and Means Committee with instructions to advertise for bids.

Reading, Pa.—Council has authorized the opening of a 50-foot street, between Perkiomen avenue and Haak street and Sixteenth and Seventeenth streets, to be known as Hoskin's place, and the opening of Milltimore street, between Windsor street and River road; \$3,500 was appropriated for paving Muklenberg street and \$4,000 for paving Cotton street with vitrified shale, bitulithic or wood block.

Sweetwater, Tenn.—Another election will be held September 8 to vote on issue of \$40,000 water and street improvement bonds.—Address City Clerk.

Amarillo, Tex.—The proposition to issue bonds for water and light systems will be submitted to a vote of the people.

Norfolk, Va.—The Board of Control has decided to have eight arc lights placed on streets.

Cudahy, Wis.—Council proposes to establish a municipal lighting plant.

Eau Claire, Wis.—An ordinance has been passed relating to the storage and sale of explosive, combustible and inflammable substances.

Milwaukee, Wis.—A resolution is pending before Council to purchase an automobile for the Police Department.

Racine, Wis.—The citizens will vote on a \$50,000 bond issue to buy land for park purposes.

Fort D. A. Russell, Wyo.—Contract for the construction of a garbage crematory has been awarded to Lewis & Kitchen, of Chicago, Ill., at \$8,780.

BIDS RECEIVED

Montgomery, Ala.—Mayor W. M. Teague has signed paving contracts aggregating \$16,000, as follows: to Shafer and Chapman, contract for paving both sides of Park place from the west side of Forrest avenue to the west side of Mulberry, \$4,200; also for paving east side of Pleasant avenue, \$4,000; to Byron Souders and Company, for paving south side of Pine street, \$1,200; to Hodgson and Hannon, for paving south side of Finley avenue, \$2,300, and for both sides of Hull street from the north side of Randolph street to the south side of Pollard street, \$2,000.

Bridgeport, Conn.—Contracts for repairs to No. 1 engine house have been awarded: L. H. Mills, plumbing; A. A. Brown, carpenter work; H. M. Purdy Company, mason work; cost, \$660.54; covering steam pipes at No. 8 and No. 9 house and No. 5's boiler with asbestos, to the Farmer's Roofing and Supply Company.

Contract has been awarded to the Locomobile Company of America to build an auto chemical apparatus, and supply a 50-gallon chemical tank, with reel and hose, for the Fire Department; cost, \$5,250.

New Britain, Conn.—A 3,500 square yards contract for bitulithic will be executed by Warren Brothers Company, of Boston.

New Haven, Conn.—Warren Brothers Company, of Boston, has been awarded a contract for 27,120 square yards of bitulithic.

Frankfort, Ind.—A contract for 15,000 square yards of bitulithic has been awarded to the Western Construction Company, of Lafayette, Ind.

Newcastle, Ind.—The Western Construction Company, of Lafayette, Ind., has received a contract for 15,227 square yards of bitulithic.

Lake Charles, La.—The West Construction Company for constructing about ten miles of sidewalks and curb at 14½ cents for cement curb, 53,000 lineal feet 16-inch deep, and 3 cents for each additional inch in depth; 14½ cents for cement sidewalks, 265,000 square feet, on 3-inch gravel concrete, 1:3:6; 20 cents for cement driveways, gravel concrete; 13 cents for 6-inch sewer pipe, in

place, and 40 cents for excavation; McGuire & Stanton bid 42 cents for curb and 18 cents for sidewalks, and O. C. Johnson 45 and 18½ cents; engineer's estimate, curb, \$25,000; walk, \$39,000; excavation, \$4,000; pipe, \$1,000; driveways, extra, \$1,000; total, \$70,000.—C. H. Burton, Assistant City Engineer.

Portland, Me.—An additional contract for 1,782 square yards of bitulithic has been awarded the Warren Brothers Company, of Boston.

Baltimore, Md.—Contracts for an electric fountain and the electric illumination of various public buildings during the Old Home Week in October have been awarded by the Board of Awards; the total cost of the illumination will be \$15,140, while the fountain, which is to be erected in the court house plaza, will cost \$2,500; the contracts do not become valid until the City Council appropriates the \$25,000 for the special illumination.

Boston, Mass.—Bids have been received for sewer in Morton street from D. E. Lynch, \$5,040.40; Wm. L. Nolan, \$4,615.20; Thos. J. Shea, \$4,074.50; Mark H. Lynch, \$3,677; P. W. Hill, \$3,528.50; Thos. F. Welch, \$3,513.40; Coughlan & Shields Co., \$3,357.75; John E. Palmer, \$2,986; T. J. O'Connell, \$2,845; Del Signore & Di Santis, \$2,588.25; awarded to Bruno, Salomone & Petitti at \$2,801.50.

Lawrence, Mass.—John Olsen, submarine diver, has been awarded contract to repair the break of the water main in the Merrimack river above the dam, there being a break in the sleeve on both ends and the gasket being broken on one side; Olsen will do the work for \$360, the city to furnish two helpers.—Michael Collins, Superintendent.

Grand Rapids, Mich.—The Hawley Lown-draft Furnace Company has been awarded contract for fuel economizer or smoke abatement device for the new City Contagious Disease Hospital for \$600.—Samuel A. Freshney, General Manager, Board of Public Works.

Winona, Minn.—Abell & Braley have been awarded contract for 621,785 square yards 2-inch gravel paving on 5-inch telford and 5-inch macadam foundation, at \$1, including excavation, and resetting 2851.35 lineal feet old curb, at 8 cents and setting 1340.5 feet new curb, at 39 cents; also paving 2693.34 square yards 2-inch gravel on 5-inch telford and 5-inch macadam foundation, at 97 cents, including excavation, and resetting 300 feet old curb, at 8 cents and setting 484.3 feet new curb, at 38 cents; John Degnan has contract for 634 square yards brick paving on 6-inch gravel and 2-inch sand foundation, at \$1.47, including excavation, and resetting 500 lineal feet retaining curb, at 27 cents.—H. B. Walling, City Engineer.

Carthage, Mo.—Henry Tanger was the only bidder to grade and gravel Lyon street and Thirteenth street; he was awarded the contract for the Thirteenth street work, at \$3,095, but his bid of \$1,585 for Lyon street exceeding the official estimate, this work will be readvertised.

Bozeman, Mont.—E. T. Rich was low bidder for constructing sewers, for \$19,870.55, as follows: 250 feet 6-inch circular vitrified pipe, 78 cents; 4,105 feet 8-inch, \$1.02; 4,835 feet 10-inch, \$1.05; 3,605 feet 12-inch, \$1.14; 6,105 feet, \$1.22; average depth of sewer, 8 feet; loam and gravel excavation, ground water to be handled; concrete, \$8.50 per yard; manholes, \$78; combined manhole and flush tank, including flushing appliance, \$160; wages of common labor, \$3 per day; C. Lundwall bid \$20,464.83.—C. W. Thorpe, City Engineer.

Butte, Mont.—The contract for paving Dakota street from Park to Galena streets has been awarded to R. M. Bardsen & Co., at \$5.80 per square yard for paving, and \$1 per linear foot for curbing.

Caldwell, N. J.—P. A. Matthews was awarded contract for widening Blumfield avenue; bid being as follows: excavating and filling, 60 cents per cubic yard; 5-foot brick sewer, \$6 per lineal foot; 24-inch tile, \$1.50 per lineal foot; cobble stone gutters, 80 cents per square yard.—County Engineer Drum.

Hoboken, N. J.—Three bids have been received for the new heating plant for No. 2 engine house: Marabon Bros. for \$800; George A. Stannard, for \$650; Lord & Co., for \$964; the bidders for furnishing three sets of harness for Engine Company No. 6 were John M. Patterson, \$347.81, and Arthur Pfleugh, \$525; the contract for the supply of turret pipe for the wagons was awarded to M. H. Hart & Co., the lowest bidders, at \$350.

Peter A. Poluso was low bidder for the removal of ashes and garbage, at \$9,500; John Poluso bid \$12,000, and James Padavano \$9,950.

Albany, N. Y.—Bids relating to the paving

of North Mohawk and other streets were inadvertently entered under Albany in our issue of September 18; they should have been under Cohoes, N. Y.

Cazenovia, N. Y.—Charles Miller & Sons Co. have been awarded contract for furnishing 49 tons 4-inch cast-iron pipe, at \$35.25 per net ton; Jones & Smith, Rome, N. Y., for laying 5,433 feet in 5-foot trench, for \$1,453; Ludlow Valve Co. for 10 fire hydrants and 4 No. 4 gate valves.—W. L. Doremus, Clerk, Board of Water Commissioners.

Dunkirk, N. Y.—Contract for mason, iron and cut-stone work, cement floors and tearing out old walls for proposed addition to the water and electric light station has been awarded to P. Meister & Son at \$1,059, and carpenter work, tinning and painting to Kelpien & Murphy at \$523.

Rochester, N. Y.—Two bids were received for the 40-foot ventilating shaft to be erected at St. Paul and Norton streets over the East Side sewer for the purpose of carrying odors off into the air, H. B. Hooker & Son bidding \$4,850 and William Simmerhays & Son \$3,760; besides the shaft, which is to be faced with brick, there is to be a water trough and perhaps a fountain at the base; no contract was let; John J. Regan has been awarded contract to construct sewer in Van Aalst street, for \$1,539.25, and H. T. Powell to lay cement walks in Maplewood avenue, for \$131.50.—E. A. Fisher, City Engineer.

Troy, N. Y.—Three proposals have been received for the construction of an 8-inch sewer in Stannard avenue, as follows: A. H. Chase, sewer, \$1.60 per foot; laterals, 80 cents per foot; manholes, \$65 each; Andrew Flynn, total bid, \$548.20; John Mullin, sewer, \$1.25 per foot; laterals, 65 cents per foot; manholes, \$50 each; the bids were referred to the City Engineer.

Yonkers, N. Y.—A proposal has been received for the work of fitting pipes in the new engine and boiler room at the tube well station from Thomas J. McCormick, the only bidder, at \$12,900; proposals were received from C. W. Hunt & Co., at \$1,449, and Hesbor, Platt & Co., at \$1,228 for the construction of an industrial railroad to bring the coal from the bins to the boilers, and to remove the ashes from the boilers to the dump.

Charlotte, N. C.—A contract for 44,000 square yards of bitulithic has been awarded the Atlantic Bitulithic Company, of Richmond, Va.

Gastonia, N. C.—The Atlantic Bitulithic Company, of Richmond, Va., has been awarded a 10,000 square yard contract for bitulithic.

Grand Forks, N. D.—Dennie Brothers have been awarded contract for the construction of the new south side fire hall, of brick, two stories, 38x80 feet in size, for \$11,115; Melby & Standahl bid \$11,549, and H. A. Hunter, \$12,754; the successful bidder also offered to accept half cash and one-half in a city warrant, payable a year later at 6 per cent.; B. O. Paulsness was awarded contract for plumbing, at \$608, the Grand Forks Heating and Plumbing Company bidding \$650, and Spriggs Brothers \$685; the Grand Forks Heating and Plumbing Company was awarded contract for heating, at \$950; B. O. Paulsness bid \$1,570 and Griggs Brothers, \$1,320.

Bellevue, O.—C. Stotz will probably get the contract for repairing and improving the banks of the reservoir at his bid of \$12,778; reinforced concrete walls will be used.

Canton, O.—Wise & Smith are low bidders on paving Lincoln avenue at \$8,400, Charles street at \$9,300, West South street at \$7,600 and Fulton street at \$5,900.

Carrolton, O.—Freshwater Brothers have been awarded contract for constructing 10,786 square yards Carrollton block pavement, at \$1.48; 3,996 lineal feet Berea curbing, at 50 cents; 145 feet circle curb, at 60 cents; catch basins, \$24; sewers, \$1 per foot; total, \$18,477.68; Downs-Campbell bid \$1.52 for paving and 52 cents for curb; total, \$19,043.74.—R. H. Lee, City Engineer.

Dayton, O.—Weil, Roth & Company, of Cincinnati, were the highest bidders at \$33,502 for the \$31,000 issue of park purchase and improvement bonds; the Dayton Savings & Trust Company bid par for the \$43,500 street improvement bonds, and \$12,505 for the \$12,500 Stewart street improvement bonds; Peter O'Malley has been awarded the contract for the improving of the west side of Albert street from Warren to Jefferson street.

Lepisic, O.—The contract for constructing the Hickey sewer was awarded to F. R. Stone, of Lima, at \$5,243.

Sandusky, O.—Thomas Lightbody, of Youngstown, has been awarded the \$100,000 filtration plant contract.

Toledo, O.—The Commissioners have awarded the contract for repairing 3½ miles of the Holland stone road to the France Company at \$1,223 per ton for stone and 30 cents per rod for grading; estimated cost, \$9,000.

Zanesville, O.—The contract for constructing a storm sewer in Brighton has been

awarded to Adams Bros. at \$1,142; it will be a 30-inch ring sewer.

Portland, Ore.—A contract for 16,997 square yards of bitulithic has been awarded to the Warren Construction Company, of Portland, Ore., and another of 25,814 square yards to the Pacific Bridge Company.

Salem, Ore.—The Warren Construction Company, of Portland, Ore., will construct 9,277 square yards of bitulithic.

Altoona, Pa.—Contract for sewer under ordinance No. 2,444 and an extension to the Fifteenth street sewer has been awarded to Saupp and Drhew; contract to Bruce Steel for terracing and excavating Prospect Park.

Butler, Pa.—George Schenck & Son, who have the general contract, have been award-

ed contract for the marble, marblelithic flooring, and brass and nickel work in the remodeled court house, at \$25,103.

Chattanooga, Tenn.—The contract for the construction of a tile sidewalk on the White-side street of Houston Park has been awarded to the Chattanooga Tile Company, at \$1.18 per square yard; the bid of the Southern Tile Company was \$1.25 per square yard.

Fort Worth, Tex.—The Downard-Lister Rock Asphalt Company, of Ardmore, I. T., will install a complete paving outfit at its own expense, and put down 30,000 yards of pavement; if it proves satisfactory the plant will revert to the city, which will also purchase all future supplies from the company; city officials believe that, with its own plant,

paving may be laid at a cost of 70 cents for asphalt, 60 cents for base, 20 cents for subfoundation, or a total of \$1.50 per square yard instead of \$2.35 as at present.

Waco, Tex.—Contract has been awarded for a new garbage plant in the city; the plant will cost \$8,000 exclusive of the building, the cost of the latter being about \$3,000.

Milwaukee, Wis.—The contract to furnish automobile for Chief of Fire Department has been awarded to Brown-Friend Motor Company at \$1,643.50; the Krueger Manufacturing Company offered a Premier car for \$2,000; the Rambler Garage Company a Rambler car for \$2,250; the McDuffee Automobile Company offered a Stoddard-Dayton car for \$2,934.

LOWEST BIDS FOR CURBS AND SIDEWALKS

CURBS

RESETTING OLD			SETTING NEW		
Lineal Feet	Character of Work	Contract Price	Lineal Feet	Character of Work	Contract Price
296	CEDAR FALLS, IA.	80.15	3,600	1:5 Concrete	\$0.28
	LAKE CHARLES, LA.	100,000	16" Cement		.43
	STURGEON BAY, WIS.	625	1:3:5 Concrete		.56 $\frac{1}{2}$
3,000	WHITE PLAINS, N. Y.	30	10,000	Blue stone	.60
	BRONXVILLE, N. Y.	5,481	Bluestone, 4 x 16		.80
	DULUTH, MINN.	7,300	Sandstone in conc.		.70
		7,300	Granite in concrete		1.25
400	ELMIRA, N. Y.	32	Medina stone on gravel		.78
		123	Medina headers on concrete		.87
	FARGO, N. D.	49	Granite		1.30
	MONROE, N. Y.	1,400	Cement		.50
	SYRACUSE, N. Y.	840	Sandstone		.85
		4,830	"		.70
1,400	PLAINFIELD, N. J.	20	1,015		.60

SIDEWALKS

Area Sq. Yds.	SURFACE MATERIAL		FOUNDATION		Contract Price per Sq. Yd.
	Kind	Thickness	Kind	Thickness	
29,444	1:1 cement	1"	1:3:6 concrete	3"	\$1.30 $\frac{1}{2}$
2,067	Blue stone	2"	Sand	2"	2.25
3,000	"	2"	"	3"	1.71
6,667	Cement		RICHMOND BOROUGH, NEW YORK		
			Steam ash	12"	1.60 $\frac{1}{2}$
878	Port. conc. 1:1 $\frac{1}{2}$	3 $\frac{3}{4}$ "	Cinders	4"	1.07
	" 1:3:6				
9,700	Cement	4"	MONROE, N. Y.		
1,750	Brick	2 $\frac{1}{2}$ "	Cinders	8"	1.80*
		Gravel and sand		7"	.65
444	1 cement, 2 sand	1"	WELLSVILLE, O.		
871	1 cement, 1 sand	1"	LA GRANGE, IND.		
		1 cement, 5 gravel	FREEPORT, ILL.	3"	.90
		2 sand, 4 gravel	RACINE, WIS.		
10,800	1 cement, 2 sand	1"	Cement		
		Concrete	JOHNSON CITY, TENN.		1.26
			Cement		
			DECATUR, ALA.		
			Concrete	4"	1.07 $\frac{3}{4}$ *

* Includes excavation.

§ Includes 6" excavation and 2" tamped gravel.

LOWEST BIDS FOR STREET PAVING

Square Yards	SURFACE MATERIAL		FOUNDATION		OTHER MATERIAL		Contract price per Sq. Yd.	EXCAVATION			REMARKS
	Kind	Thickness	Kind	Thickness	Kind	Thickness		Quantity cu. yds.	Material	Price	
48,000	Asphalt	1"	Slag concrete	6"	Binder	1 $\frac{1}{2}$ "	\$2.14 $\frac{1}{2}$				
	"	2"	"	6"	Paint coat	2 $\frac{1}{2}$ "					
2,200	Asphalt	2"	Gravel concrete 1:3:7	6"	Binder	1"	2.31	550			Excavation included in bid. No tracks.
11,750	Asphalt		Concrete	6"			1.04				
10,sts...	Asphalt	"	"				2.10				\$0.25 10-year guarantee.
	"	"					2.09				5-year
620	Asphalt	2 $\frac{1}{2}$ "	Concrete	6"			2.45				
8,660	"	2 $\frac{1}{2}$ "	"	6"			2.29				Excavation (0.65 cu. yd. per sq. yd.) included.
6,623	Asphalt						1.68				
6,853	"						1.69				
170,700	Asphalt	1 $\frac{1}{2}$ "	Concrete	5"	Binder	1 $\frac{1}{2}$ "	2.40				
	"	1 $\frac{1}{2}$ "	"	5"	Paint coat	2.27					
17,038	Asphalt		Already in				1.51				
8,984	Asphalt	2 $\frac{1}{2}$ "	Concrete	6"			1.98		Dirt	.30	
1,560	Asphalt block	2 $\frac{1}{2}$ "	Concrete	4 $\frac{1}{2}$ "			1.78				
1,250	Asphalt block	3"	1:3:6 concrete	4 $\frac{1}{2}$ "			2.84	30	Loam and rock	.38	Excavation included.
4,830	Asphalt block	3"	Slag	8"	Sand	2"	1.92	1,700		.38	
48,000	Bitulithic		Slag bitumen	6"			2.05				
	"		concrete	6"			2.30				
	"		Stone concrete	6"			2.40				
	"		bitumen	6"			2.15				
	"		Slag concrete	5"			2.20				
	"		Stone	5"			2.30				
	Bit.macadam	Slag	"	6"			2.14 $\frac{1}{2}$				

LOWEST BIDS FOR STREET PAVING—Continued

Square Yards	SURFACE MATERIAL		FOUNDATION		OTHER MATERIAL		Contract price per Sq. Yd.	EXCAVATION			REMARKS
	Kind	Thickness	Kind	Thickness	Kind	Thickness		Quantity cu. yds.	Material	Price	
3,186	Bitulithic				TORONTO, CANADA.		1.45				Surface only.
170,700	Bitulithic	2"	Concrete	5"	PENSACOLA, FLA.		2.65				
25,000	Bitulithic		Bituminous	5"	DECATUR, ALA.		2.15				Excavation included.
13,310	Tar macadam	2"	Broken stone	6"	DULUTH, MINN.		1.30	400		.75	Five-year guarantee.
	Tar macadam	11"			ESCANABA, MICH.		1.65			0.15 to .20	
	"	8"			JOHNSON CITY, TENN.		1.35				
48,000	Brick		Slag concrete	6"	PENSACOLA, FLA.		2.53				
	"		"	4"	Cushion	1"	2.35				
170,700	Brick		Concrete	4"	8"		2.61				
	"		Sand				2.01				
6,000	Brick		Concrete	5"	DECATUR, ALA.		2.20				Excavation included.
9,600	Brick	4"	Slag	0"	OAKMONT, PA.		1.38	5,000	Clay	.48	
12,000	Vit. block		Concrete	6"	SHARPSVILLE, PA.		1.86				
0.520	Brick	4 1/2"	Gravel	8"	DILLONVALE, O.		1.20	2,850	Turnpike	.30	Excavation not included in bid.
18,000	Vit. block		Port. concrete	6"	MASON CITY, IA.		2.10				Cement filler, asphalt expansion joints.
15,702	Brick	4"	Concrete	5"	PLAINFIELD, N. J.		2.39				Excavation included.
11,370	Brick		Gravel	6"	LANSING, MICH.			7,176	Clay	\$21,550 total bid.	
					WOOSTER, O.						
11,230	Brick	4"	{ Stone Gravel Sand 2"	5" 3" 2"	SEWICKLEY, PA.		1.51				
0.655	Brick	4"	Slag	8"	Sand	2"	1.53	3,800		.45	Paving pitch grout.
2,525	Vit. block		Sand	12"	AKRON, O.		1.23	1,500	Sand	.30	
17,000	Brick		Stone	8"	CLARION, PA.		2.01	6,200			Excavation included.
	Brick		Macadam		RACINE, WIS.		1.80				
4,352	Brick	4"	Gravel	10"	WELLSVILLE, O.		1.18	430	Loam	.30	
1,675	"	4"	Already in				.96				
4,000	Brick	4"	Gravel and sand	10"			1.18	None			
10,474	Brick, Athens		Concrete Stone		WAUSEON, O.		1.81			.34	Cement filler, 7 cts. a sq. yd.; tar filler, 16 cts.
	"				LINDSEY, O.		1.76				
7,190	Met. block		Limestone	8"	SAND CUSHION	2"	1.38	5,190	Earth	.30	Cement filler, 12 cts. ext.
17,700	Brick		Broken stone	8"	CADIZ, O.		1.50				
6,528	Brick		Already in		PIQUA, O.		1.34				
10,000	Brick		Concrete	6"	OWEGO, N. Y.		1.20				Brick furn. by village. Excav. inc., 1.03 ft. av. depth.
9,000	Vit. brick	4"	{ Port. conc. } 1:3:5	5" 5"	EDWARDSVILLE, ILL.		1.64	4,100			Excavation inc. in bid.
9,800	"	4"					1.67	5,000			
27,000	Brick		Broken stone	6"	FREEPORT, ILL.		1.30				
8,462	Brick	4"	Gravel	6"	GOSHEN, IND.		1.43		Dirt	.17	Pioneer filler.
15,600	Brick		Macadam	6"	CEDAR FALLS, IA.		1.64	3.50		.35	
	Brick		Concrete		FARGO, N. D.		2.96			.50	Five-year guarantee.
730	Stone block	7"	Concrete	6"	SYRACUSE, N. Y.		3.55				Excavation (0.8 cu. yds. per sq yd.) included.
48,000	Hassam	6"			JOHNSON CITY, TENN.		1.75				
12,724	Macadam	7 1/2"	Rolled loam		BRONXVILLE, N. Y.		.90	8" deep	Sand		Excavation inc. in bid.
20,000	Trap macadam	3"	Trap rock	5"	WHITE PLAINS, N. Y.		.75				Grading, 50 cts. per lin. ft.

NEWS OF THE SOCIETIES

International Association of Fire Engineers.—Plans are about complete for the convention to be held at Washington, D. C., October 8-11, according to announcement made by the Secretary, James McFall, of Roanoke, Va. Chief William T. Belt, of Washington, and a committee of citizens are arranging an interesting plan of entertainment which will include a trip to Mount Vernon and Arlington National Cemetery and a reception by the President of the United States. Arrangements have been made for an exhibit of apparatus by manufacturers and dealers, which will surpass anything heretofore attempted, space being provided gratis. The nearness of the National Capital to Norfolk and the Jamestown Exposition will enable visitors to attend and an invitation has been extended officers and members by John H. Kegebein, Chief of the Norfolk Fire Department, to accept the hospitality of the Exposition City. The headquarters of the Association during the convention at Washington will be at the Ebbitt House. The program follows:

TOPICS

Are Shingle Roofs in Cities Conflagration Hazards? By Chief T. W. Haney, Jacksonville, Fla.

Fire Protection for Private Corporations. By Herbert Heston, Fire Marshal Pennsylvania Railroad, Philadelphia, Pa.

Is Fire Prevention of More Importance than Fire Protection? By Mr. H. C. Henley, Chief Inspector St. Louis Fire Prevention Bureau, St. Louis, Mo.

Fire-boat Protection. By Chief Edward F. Croker, New York, N. Y.

Extinguishing Fires in Cellars and Sub-cellars. By Chief C. E. Swingley, St. Louis, Mo.

Electric Fires: Their Cause and Prevention. By Mr. W. H. Merrill, Secretary National Fire Protection Association, Chicago, Ill.

What Are the Dangers of Carbon-bisulphide in a Liquid Form, and What Are the Best Methods of Handling and Storage of Same? By Chief J. R. Canterbury, Minneapolis, Minn.

How to Prevent Quarter-Cracks in Horses' Hoofs, and the Care of Fire Department Horses in General. By Dr. C. B. Robinson, District Veterinarian, Washington, D. C.

Morality: Its Effect on Efficiency. By Chief J. O. Glanville, Chief Salvage Corps, St. Louis, Mo.

OPEN FOR DISCUSSION

Faulty building construction. A fruitful cause of the spread of fires and loss of life. The duty of Fire Chiefs to see that their respective cities have a proper code of building laws, and a rigid enforcement of the same. Proper building construction, together with important devices for the prevention of fire and the manner and methods of occupying buildings.

Should all school buildings, over one-story high, be equipped with fire-escapes, and the pupils trained to the use of them? Which is the best style of fire-escape for schools, asylums, tenement houses, etc.? What is the best code of rules for fire drill in schools?

How much salvage work should be done by the Fire Department in cities where there is no regular corps maintained?

The advisability of using explosives to check conflagrations.

The necessity and advantage of large manufacturing concerns, mercantile establishments, and department stores, etc., organizing their employees and having them drill daily as a fire corps.

State clubs for Chiefs of Fire Department. The benefits derived from same, if any.

Transportation of fire apparatus in event of sending aid to other places. Which is the best method to pursue?

Should telephones be installed in fire-alarm boxes? The advantage of same, if adopted.

Coffee wagons at fires. The necessity of same, and who should bear expense.

Shut-off nozzles on engine streams.

The use of 3-inch hose.

Central States Water Works Association.—The eleventh annual convention met September 17-19, at Wheeling, W. Va. The welcoming address on behalf of the city of Wheeling was delivered by Mayor C. C. Schmidt. Hon. Thos. R. Cooke, Toledo, O., President of the Association, responded. One of the interesting features of the convention was an illustrated public lecture on "Filtration," by Mr. Fred Leopold and Mr. Morris Knowles, of Pittsburg, Pa. The social features of the meeting were trolley rides including trips to industrial plants and to the Water Works of Wheeling and Steubenville. The closing entertainment was "A Night in Bohemia," at the Elks' Club. The following officers were elected for the ensuing year: President—John Langan, Tipton, Ind. Vice-President—Wm. Schwertfeger, Wheeling, W. Va. State Vice-Presidents—Elkanah Hulley, Marion, Ind.; Asa Williams, Owensboro, Ky.; L. M. Latta, Akron, O.; A. L. Holmes, Grand Rapids, Mich.; Fred Bosch, Whitewater, Wis.; J. Ahearne, Nashville, Tenn.; W. J. Scroggins, Wheeling, West Va.; T. H. Verner, McKeesport, Pa.; Dabney H. Maury, Peoria, Ill. Secretary—William Allen Veach, Newark, O. Treasurer—A. W. Inman, Massillon, O. Executive Committee—A. H. McAlpin, Columbus, O.; C. W. Wiles, Delaware, O. Finance Committee—Geo. F. Cooper, Xenia, O.; Wilbur Schofield, Benwood, W. Va.; J. M. Wisler, Toledo, O. The next convention will meet in Pittsburg, Pa., in 1908.

Among the papers presented were the following:

"Repairing a Foot Valve," by C. W. Wiles, Delaware, O.; "Garbage Disposal," by Thomas R. Cook, Toledo, O.; "Sand Filtration by Nature's Method," by Ferdinand Grote, Owensboro, Ky.; "Meters," by A. L. Holmes, Grand Rapids, Mich.; "Deep Well Water Supply," by John Langan, Tipton, Ind.; "Water-borne Diseases," by S. L. Johnson, A. M. Sc.D., M.D., Wheeling, W. Va.; "Municipal Ownership of Public Utilities," by John W. Hill, Cincinnati.

Union of Canadian Municipalities.—At the convention opened at Fort William, Ex-Mayor Dyke delivered the address of welcome. President Coatsworth, of Toronto, followed with the presidential address in which he reviewed the progress of the Union since its organization seven years ago. W. D. Lighthall, of West Mount, the honorary Secretary, read the annual report. The formation of two new provincial unions, those of Nova Scotia and New Brunswick, was noted. The Union took action regarding a number of Legislature bills pertaining to franchises and their complaint led to better provincial legislation. While the Union has tried to be as unobtrusive as possible, the different governments have gladly availed themselves of its existence, and that of its branches, in order to prevent many injurious projects. During the enquiry of the Dominion Railway Commission into telephone rates and service, the Commission was kept in touch with the municipalities and their needs. The Union has insisted that no monopoly of a necessity should exist without effective government control. A bureau of information has been kept and cordial relations maintained with the League of American Municipalities and the National Municipal League. About 200 municipalities are members of the League. At the session at Port Arthur, Comptroller Ward, of Toronto, read a paper, "All Utilities Which Are in the Nature of Monopolies Should be Owned and Controlled by the People and Operated for Their Advantage, Either by Mu-

nicipalities, Provinces or the Dominion." Ex-Mayor Dyke gave a lengthy address on "Municipal Ownership; Its Difficulties and Advantages as Illustrated in the Cities of Fort William and Port Arthur." A paper on "Municipal Development of a Manufacturing City" was read by Mayor Bowlby, of Brantford. W. Spencer Page, of Regina, read a paper on "Municipal Law of Saskatchewan." W. Cousins, Mayor of Medicine Hat, read a paper on "Advantage of Natural Gas." J. G. Kinnaird, of Edmonton, read a paper on "Municipal Financing." A series of resolutions regarding municipal ownership or control of public utilities was passed. The city of Medicine Hat was chosen for the next annual meeting. The following officers were elected: Hon. Past Presidents—Mayor Judd, London; Ald. Lapointe, Montreal. President—R. T. McIlreath, Mayor of Halifax. First Vice-President—Ald. Lapointe, Montreal. Second Vice-President—Comptroller Ward, Toronto. Third Vice-President—Reeve Cochran, of Blanchard. Secretary-Treasurer—Ex-Mayor Lighthall, West Mount.

American Society of Municipal Improvements.—The fourteenth annual convention will be held in Detroit, Mich., October 1-3. Local committees on entertainment and a reception committee of citizens have been appointed to look after the interests of members and guests attending this convention. The program follows:

First Day, Tuesday, October 1, 10 a.m.—Meeting of the Executive Committee at Convention Headquarters. 10 a.m. to 12 m.—Delegates will report at the headquarters for registration, badges, credentials, etc.

Afternoon session, 2 p.m., at the Light Guard Armory. Address of welcome on behalf of the city of Detroit, by His Honor the Mayor. Response by the First Vice-President, James Owen, of Montclair, N. J. Regular order of business: Roll call. Report on Municipal Data and Municipal Statistics, by James W. Howard, Chairman, Consulting Engineer, New York City, and papers on topics relating to this subject. Report of Committee on Municipal Franchises, by R. H. McCormick, Chairman, City Engineer, Detroit, Mich., and papers on topics relating to this subject.

Second Day, Wednesday, October 2. Morning Session, 9:30 a.m.—Report of Committee on Taxation and Assessment, by W. H. V. Reimer, Chairman, City Engineer, East Orange, N. J., and papers on topics relating to this subject. Report of Committee on Disposal of Garbage and Street Cleaning, by T. Chalkley Hatton, Chairman, Consulting Engineer, Wilmington, Del., and papers on topics relating to this subject. Report of Committee on Sewerage and Sanitation, by Charles H. Rust, Chairman, City Engineer, Toronto, Canada, and papers on topics relating to this subject. Paper on "Phenomena of Crushing of Sewer Conduits," by Jas. N. Hazlehurst, Engineer, Board Public Works, Mobile, Ala. Paper on "Installation of Septic Tanks and Bacteria Beds for a Section of Toronto" by Chas. H. Rust, City Engineer, Toronto, Canada. Election of officers and selection of next place of meeting.

Afternoon Session, 2:30 p.m.—The afternoon will be occupied by a drive to view points of interest in Detroit. The evening will be devoted to papers descriptive of Detroit, and papers on general topics.

Third Day, Thursday, October 3. Morning Session, 9:30 a.m.—Report of Committee on Electric Street Lighting, by E. A. Fisher, Chairman, City Engineer, Rochester, N. Y., and papers on topics relating to this subject. Report of Committee on Water Works and Water Supply, by J. L. Ludlow, Chairman, Consulting Engineer, Winston-Salem, N. C., and papers on topics relating to this subject.

Afternoon Session, 2:30 p.m.—Report of Committee on Review, covering "Water Supply, Sanitation and Other Municipal Work During the Year," by A. Prescott Folwell, Chairman, Editor "Municipal Journal and Engineer," New York City. Paper on "Street Paving and Cleaning and Refuse Disposal; the Year's Review," by Clarence D. Pollock, Assistant Engineer, Bureau of Highways, New York City. Report of Committee on Street Paving, by Allan W. Dow, Chairman, Chemical Engineer, New York City. Paper on "Paving Brick Specifications and Tests for Best Qualities," by J. W. Howard, Consulting Engineer, New York City. "Disad-

vantages of the Long-time Guarantee and Maintenance of Street Pavements from Contractor's Standpoint," by W. H. Andrews, of Hamilton, Ohio. "Specifications for Treating Wooden Block for Paving," by George W. Tillson, Chief Engineer, Bureau of Highways, Borough of Manhattan, New York City, and papers by Messrs. Hittle and Harper on topics relating to street paving. Paper on "Density of Pavements a Most Important Element of Their Durability," by J. W. Howard, Consulting Engineer, New York City.

Evening Session, 8 p.m.—Report of Committee on City Government and Legislation, by Horace Andrews, Chairman, Consulting Engineer, Albany, N. Y., and papers on topics relating to this subject. Report of Committee on Fire Protection, by Alcide Chausse, Chairman, Superintendent of Buildings of Montreal, Canada. "Fire Protection," by F. W. Fitzpatrick, Consulting Architect, Montreal, Canada. "Fireproofing," by Alcide Chausse, Superintendent of Buildings, Montreal, Canada. Report of Committee on Park Development and Maintenance, by James Owen, Consulting Engineer, Montclair, N. J. Paper on "The Planting and Care of Shade Trees," with lantern slide views, by Wm. Solotaroff, Superintendent, Shade Tree Committee, East Orange, N. J.

Calendar of Meetings

September 25.

New Hampshire State Firemen's Association.—Convention, Laconia, N. H.—George L. Osgood, Secretary, Concord, N. H.

September 30—October 4.

American Public Health Association.—Thirty-fifth annual meeting, Atlantic City, N. J.—Dr. Charles O. Probst, Secretary, Columbus, O.

October 1-4.

Pennsylvania State Firemen's Association.—Convention and tournament, Pittsburgh, Pa.—W. W. Wunder, Secretary, Reading, Pa.

October 1-4.

American Society of Municipal Improvements.—Annual convention, Detroit, Mich.—George W. Tillson, Secretary, 831 Ocean avenue, Brooklyn, N. Y.

October 8-11.

International Association of Fire Engineers.—Thirty-fifth Annual Convention, Washington, D. C.—James McFall, Secretary, Roanoke, Va.

October 10-12.

American Electro-Chemical Society.—Fall meeting, Chemists' Club, 108 West 55th street, New York City.—Dr. Joseph W. Richards, Lehigh University, South Bethlehem, Pa.

October 14-16.

American Street and Interurban Railway Engineering Association.—Annual convention, Atlantic City, N. J.—S. W. Mower, Secretary, Southwestern Traction Co., London, Ont.

October 14-18.

American Street and Interurban Railway Association.—Annual convention, Atlantic City, N. J.—B. V. Swenson, Secretary, Engineering Societies Building, 33 West Thirty-ninth street, New York.

October 15-17.

Southern New York Firemen's Association.—Convention and tournament, Greenport, N. Y.—J. H. Downing, Secretary, 211 Duffield street, Brooklyn, N. Y.

October 15-17.

Association of Railway Superintendents of Bridges and Buildings.—Annual meeting, Milwaukee, Wis.—S. F. Patterson, Secretary, Concord, N. H.

October 16-18.

American Gas Institute.—Second annual meeting, Washington, D. C.—Jas. W. Dunbar, Secretary, New Albany, Ind.

November 12.

National Tax Association.—Conference, Columbus, O.

November 19.

National Municipal League.—Annual convention, Providence, R. I. (in conjunction with the American Civic Association).—Clinton Rogers Woodruff, Secretary, North American Building, Philadelphia, Pa.

December 26.

International Sanitary Convention of American Republics.—Third international meeting, Mexico City.—Surgeon General Walter Wyman, Chairman International Sanitary Bureau, Public Health and Marine Hospital Service, Washington, D. C.

PERSONALS

BEHRMAN, MARTIN, Mayor of New Orleans, La., at the request of Governor Blanchard, delivered an address and represented him at the opening of the big fair at Jeanerette recently.

BINGHAM, THEODORE A., Police Commissioner of New York City, has returned to his duties after a five weeks' vacation spent in New Brunswick. During his absence First Deputy Commissioner Arthur J. O'Keefe, who has charge in Brooklyn, was in command.

BUHL, FRANK H., multi-millionaire of Sharon, Pa., who recently presented a club-house valued at \$250,000, contemplates giving the town a 150-acre pleasure park, the Jacob Miller farm, north of Sharon, having been purchased by S. H. Miller, president of the Buhl Club, for the purpose.

BURKE, JERE T., an official of the Southern Pacific Railroad, has been made president of the Peninsular Electric Railway of California, the cut-off line being built from Mayfield to Los Gatos, a distance of twenty miles, and succeeds O. A. Hale, of San Jose, Cal., deceased.

DOUGLASS, ANTHONY C., Mayor of Niagara Falls, N. Y., has been spending his vacation near his birthplace in Ontario, Canada, after his arduous duties since January 1, when he has not only fulfilled the duties of the Mayoralty and brought about the illumination of Niagara Falls, but he has directed the boring of a tunnel at Jersey City Heights, N. J., which necessitated about eighty trips to New York City.

HERING, RUDOLPH, D. Parsons and S. Whinery of New York City, were in Toronto, Canada, inspecting the street cleaning and garbage collecting systems. They came as a deputation appointed by the Mayor of New York to report on these matters.

HERRMAN, MOSES, president of the Park Department of New York City for two years, has been appointed a Police Magistrate of the city by Mayor George B. McClellan. He was born in New York City forty years ago, is a son of the late Gerson N. Herrman, for many years a Police Magistrate, and served as Assistant District Attorney.

HORAN, MICHAEL J., Fire Chief of Chicago, Ill., recently visited New York and called at the office of Chief Edward F. Croker of the New York Fire Department, but the latter had gone to Schenectady with Battalion Chief John Kenton of the Fire Boat Service to test pumps that are being built there for two new fire boats.

HOWARD, J. W., Consulting Engineer on Roads, Streets and Pavements, 1 Broadway, New York, N. Y., has been called upon by the Commissioners of Accounts of Mayor McClellan of New York to assist Governor Hughes of New York in his investigation of President John F. Ahearn of the Borough of Manhattan in respect to the bad state of asphalt and other pavements and the causes of their neglect.

KNUDSON, A. A., of New York City, has been appointed to act as expert in connection with the litigation between the Toronto Street Railway Company and the Toronto Gas Company of Toronto, Canada. Associated with Mr. Knudson are Mr. W. E. Foss, electrical engineer, of Boston; Mr. L. C. Anderson, consulting electrical engineer, of Franklin, O.

LONG, CHARLES R., President of the Louisville Water Company of Louisville, Ky., for many years, died at his home recently, aged 84 years.

MCLELLAN, GEORGE B., Mayor of New York, N. Y., has returned to his office after spending the summer in Maine and New

Hampshire, and will take up the matter of investigating recent awards of contracts, including that of building the Ashokan dam, which was awarded McArthur Brothers at a sum nearly \$2,000,000 in excess of the lowest bidder.

OVERTON, JOHN P., Mayor of Santa Rosa, Cal., who resigned recently, has consented to withdraw his resignation and to remain in office until the expiration of his term next April, resolutions urging this having been passed by the Council, the Chamber of Commerce, Elks, Native Sons, and other organizations.

PLYMPTON, GEORGE W., Brooklyn, N. Y., President of the Board of Electrical Subways in Brooklyn during Mayor Low's administration, Professor of Physical Sciences at the Polytechnic Institute, and the oldest Director of Cooper Union of New York, died recently at his summer home, Tyson, Vt., aged 80 years.

POE, HARRY T., JR., Assistant Engineer with the American Pipe Manufacturing Company, has resigned to become City Engineer and Superintendent of Water Works of Americus, Ga.

RONDALL, E. H., has been elected City Surveyor of Fredericksburg, Va.

TRADE NOTES

Asphalt.—Statistics show that the output of all classes of asphalt, both natural and refined, including bituminous rock, that entered the market from quarries and refineries in the United States in 1906 was 138,059 short tons, valued at \$1,290,340, as against 115,267 short tons, valued at \$758,153, in 1905, an increase in 1906 of nearly 20 per cent. in quantity and of 70 per cent. in value.

Automatic Tamper.—Frank Gilroy, Chief Engineer of the New York Central's compressed air system in Buffalo, has invented a device for tamping up ties with pneumatic tools. The device for furnishing the air is carried on a skeleton rubble car and is said to be light enough for any ordinary gang to lift from the track. Rubber hose carries the compressed air to the tools, which are operated simultaneously on opposite sides of each tie and pound away at the rate of several hundred strokes each minute.

Catalogue.—The Chain Belt Company, Milwaukee, Wis., issues a 300-page bound catalogue describing its elevating, conveying and power transmitting machinery. The chain belts put on the market by this company are operated and tried in their shops and tested to double the working strain given in their lists. Among the specialties made by this company and illustrated is an ash elevator in the power house of the Republican Hotel, Milwaukee. A cut is also given of a water elevator delivering 300 gallons a minute with 100 revolutions of the drive wheel, with a lift of 10 feet, 3-8 flights being used on every sixth link, one horsepower being required for operation.

Iron Pipe.—The Youngstown Sheet and Tube Company, Youngstown, O., is finishing an order for 600 miles of 8-inch iron pipe for the Texas Company, Beaumont, Tex. Over 50,000 tons of puddled iron plates were required, all rolled at the company's own plate mill from its own muck tar. The pipe is heated to a temperature of 350 degrees, then dipped in asphalt and dried in ovens. This process is found to prevent corrosion in alkali soil.

Concrete Piles.—A recent municipal structure in which Raymond concrete piles were used in the foundation work is Public Bath No. 1, at Fourth avenue and President street, Brooklyn, N. Y.

Pumping Engine.—The Allis-Chalmers Company, Milwaukee, Wis., has closed a contract with the Louisville, Ky., water works for a 24,000,000-gallon daily capacity, vertical, triple-expansion pumping engine of latest design and having the highest possible economy. The contract amounts to in the neighborhood of \$250,000, and was awarded to the Allis-Chalmers Company by the unanimous vote of the Water Board, in competition with five other competitors.

Smoke Consumers.—The Hawley Down-Draft Furnace Company, Superior and Sedgwick streets, Chicago, Ill., has been authorized by the Committee on Ways and Means to install fuel economizer or smoke consuming device in connection with the boilers in the City Hall, Detroit, Mich. The extra expense involved amounts to \$1,447.

Pumping Station.—The McBride Surveying and Engineering Company, Pittsburgh, Pa., is building a pumping station for the borough of Emsworth, Pa., to contain two Brooks centrifugal pumps, each of 480 gallons per minute capacity.

Sewer Pipe.—Bonham & McConnell, Selma, Cal., have recently engaged in the manufacture of sewer pipe, in addition to their concrete block business.

INCORPORATIONS

J. W. Cooper Company, Buffalo, N. Y.; to manufacture engines and machinery, railroad rails, etc.; capital, \$20,000. Incorporators: John W. Cooper, Charles F. Filbrick, Willis M. Spaulding, Buffalo, N. Y., and others.

Danville & Southern Railway Company, Danville, Ill.; to construct a portion of a McKinley system interurban line from Danville to Georgetown; capital, \$10,000. Incorporators: W. H. Camahan, B. E. Bramble and others.

Idaho Water and Electric Power Company, Boise, Idaho; to develop water power along the St. Joe river. Incorporators: Hon. J. L. McClellan, President; P. J. Scallion, Vice-President; Maude Thornton, Secretary; Charles G. Davies, Treasurer.

Miller Electric Company, Terre Haute, Ind.; capital, \$10,000. Incorporators: Jacob W. Miller, Warner E. Coordnes and others.

L. E. Myers Company, Buffalo, N. Y.; contractors, build roads, railways, etc.; capital, \$1,000. Incorporators: Paul E. Klise and Charles E. Collins, 531 Brisbane Building; Oscar F. Georgi, 401 North Utica street; all of Buffalo, N. Y.

Tennessee Construction Company, Chattanooga, Tenn.; to build an interurban electric line from Chattanooga to Dalton; capital, \$25,000. Incorporators: Samuel B. Smith, President; S. W. Divine, Vice-President; W. M. Elliott, Secretary and Treasurer; W. D. Carswell, Theo. F. King.

Van Buren Light and Fuel Company, Van Buren, Ark.; capital, \$25,000. Incorporators: James Bizzard and others.

United States Construction Corporation, Portland, Me.; general contractors; capital, \$20,000,000. President, F. W. Seward, New York; Treasurer, J. E. Manter, Portland, Me.; Clerk, M. W. Baldwin, Portland, Me.

Wayne Water Company, Chester, Pa.; **Wurtemburg Water Company**, Chester, Pa.; to supply water to Wayne township from Elwood City to Wurtemburg. Incorporators: A. K. Little, A. A. Rathaus and A. H. McNamee.

Proposals

STREET LIGHTING

Bids for Street Lighting Charleston, S. C., from June 30, 1908, for a Term of One, Two or Four Years

Charleston, S. C.

Sealed proposals will be received at the office of the City Electrician of Charleston, S. C., until 12 o'clock, noon, on November 15, 1907, for lighting the streets and public buildings of the City of Charleston, S. C., for a term of one, two or four years, with electricity, gas or some other illuminating power equivalent thereto, or partly by one and partly by another.

The estimate requirements are five hundred (500) arc lights of the inclosed type, to be supplied with an alternating current of not less than 6.6 amperes, under a pressure of not less than seventy (70) volts, and the electric energy of each lamp 475 watts, with an illuminating capacity of 1,200 (normal) candle-power. Gas to have five (5) foot burners, gas to be delivered at pressure of not less than 13 inches, and to be of standard commercial quality. Detail specifications of lighting will be furnished all bidders upon application to the City Electrician. Lights under this contract to be ready for operation on June 30, 1908. Certified check for \$350 to accompany each bid, and every bidder must be prepared to furnish a bond satisfactory to the Mayor to the penal amount of \$25,000, conditioned for the performance of his part of the contract, provided his bid is accepted. The city reserves the right to reject any and all bids.

ION SIMONS,
City Electrician,
Charleston, S. C.

Approved: R. M. MASTERS, Chairman,
Committee on Lighting.

SEWERS AND LATERALS

Paducah, Ky.

Sealed bids will be received by Board of Public Works until 3 p. m. October 1, 1907, for constructing about fourteen miles of six-inch vitrified pipe and sewer laterals, ranging in depth from twelve to six feet. A certified check on some bank of the City of Paducah, payable to John J. Dorlan, City Treasurer, must accompany each bid. The right to reject any and all bids is reserved.

L. A. WASHINGTON,
City Engineer.

SEWER

Office, Commissioners of the District of Columbia, Washington, D. C., Sept. 9, 1907.

Sealed proposals will be received at this office until 12 o'clock, noon, Monday, September 30, 1907, for constructing sewer in the District of Columbia. Forms, specifications and necessary information may be obtained at Room 43, District Building, Washington, D. C.

HENRY B. F. MACFARLAND,
HENRY WEST,
JAY J. MORROW,
Commissioners.

STREET PAVING

Billings, Mont., August 27, 1907.

Sealed proposals for the paving with shale brick of certain portions of streets of the City of Billings, described in the resolution creating Special Improvement District No. 21, will be received by the City Council up to 8 o'clock p. m. of October 1, 1907, addressed to the undersigned, and endorsed: "Proposals for paving."

The work for which proposals are invited consists of approximately 6,300 square yards of shale brick pavement; the foundation for which is otherwise provided for.

Each proposal must be accompanied by a certified check for \$500 on some responsible bank in the City of Billings, and made payable to said city. The successful bidder must enter into an undertaking in the sum of \$2,-

000, with approved sureties. Plans and specifications are on file in this office.

The right is reserved to reject any and all bids.

J. D. MATHESON,
City Clerk.

WATER WORKS SUPPLIES

Office of the Board of Water Commissioners of the City of Los Angeles.

August 19, 1907.

Sealed proposals will be received by the Board of Water Commissioners of the City of Los Angeles, at the office of said Board, 440 South Hill street, up till 3:30 p. m. of September 30, 1907, for furnishing and delivering f. o. b. cars at Los Angeles, California, approximately 6,000 tons of standard hub and spigot cast-iron water pipe, as follows: 920 pieces 24-inch; 955 pieces 20-inch; 670 pieces 20-inch; 490 pieces 20-inch; 2,500 pieces 12-inch; 500 pieces 10-inch; 1,000 pieces 8-inch; 2,000 pieces 6-inch; 2,500 pieces 4-inch. Specifications can be obtained, upon application, from the Secretary, at 440 South Hill street.

A certified check for 5 per cent. of the amount of the bid, made payable to Jno. J. Fay, Jr., President of the Board, is to accompany each proposal, to be held as a guarantee that a contract with bond approved by the said Board will be entered into by the party whose bid is accepted, in accordance with the terms of the said bid.

The Board reserves the right to reject any or all bids, in whole or in part.

WM. MULHOLLAND,
Superintendent.

WATER FILTERS

Atlanta, Ga., Sept. 7, 1907.

Sealed proposals will be received by the Board of Water Commissioners, Atlanta, Ga., until 4:00 o'clock p. m. Wednesday, October 23, 1907, for furnishing and erecting complete a sectional washing pressure filter plant for the City of Atlanta, Ga. Said filter plant to consist of eight (8) units, each unit 8 feet in diameter and 20 feet long. Said filter plant to have a minimum guaranteed daily delivering capacity of 4,000,000 gallons when one (1) unit is out of service during washing period. Guaranteed capacity of proposed filter plant to be tested before accepted. Capacity to be timed and delivery measured by direct discharge into clear water basin.

Said filter plant to be erected at water works pumping station No. 2, on Southern Belt Railroad, about three (3) miles from the city.

Plans and specifications can be had on application to General Manager, Atlanta Water Works, Atlanta, Ga.

The Board reserves the right to reject any or all bids.

BOARD OF WATER COMMISSIONERS,
PARK WOODWARD,
General Manager.

Civil Service Examinations

Identification Clerk.—The United States Civil Service Commission announces an examination, October 2, 1907, to secure eligibles to fill two vacancies in the position of record clerk, at \$1,200 per annum, in the penitentiaries at Fort Leavenworth, Kan., and Atlanta, Ga. At the examination practical questions on the Bertillon system of identification will be asked. Apply on Form 1312.

WANTS

WANTED—Municipal engineer; graduate; permanent; state experience, salary wanted, etc. Indian Territory. Address No. 606, care Municipal Journal and Engineer.

CHEMISTS—A number of desirable openings for experienced chemists; various locations; salaries \$1,000-\$3,000. Write us to-day for free list of positions open. Hapgoods, 305 Broadway, N. Y. City.

GRAVITY & PRESSURE FILTERS

WATER PURIFICATION FOR ALL PURPOSES
WATER SOFTENING & FILTRATION SYSTEMS.

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